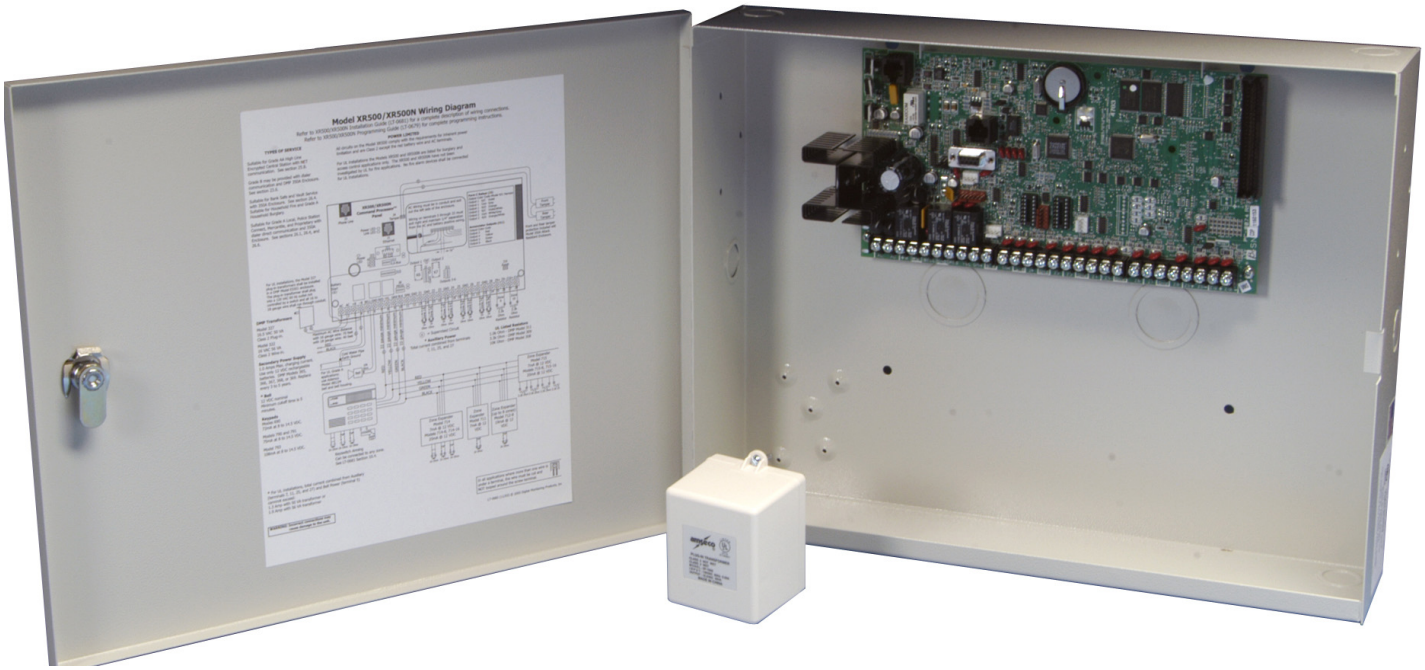
INSTALLATION GUIDE



XR500 SERIES
COMMAND PROCESSOR™ PANEL

Digital Monitoring Products

MODEL XR500, XR500N, XR500E
COMMAND PROCESSOR
INSTALLATION GUIDE

FCC NOTICE

This equipment generates and uses radio frequency energy and, if not installed and used properly in strict accordance with the manufacturer's instructions, may cause interference with radio and television reception. It has been type tested and found to comply with the limits for a Class A computing device in accordance with the specification in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the installer is encouraged to try to correct the interference by one or more of the following measures:

Reorient the receiving antenna

Relocate the computer with respect to the receiver

Move the computer away from the receiver

Plug the compute into a different outlet so that computer and receiver are on different branch circuits

If necessary, the installer should consult the dealer or an experienced radio/television technician for additional suggestions. The installer may find the following booklet, prepared by the Federal Communications Commission, helpful:

"How to identify and Resolve Radio-TV Interference Problems."

This booklet is available from the U.S. Government Printing Office, Washington D.C. 20402

Stock No. 004-000-00345-4

© 2003-2010 Digital Monitoring Products, Inc.

Information furnished by DMP is believed to be accurate and reliable.
This information is subject to change without notice.

TABLE OF CONTENTS

Product Specifications Summary
1.1 Power Supply 1
1.2 Communication 1
1.3 Panel Zones 1
1.4 Keypad Bus 1
1.5 LX-Bus™ 1
1.6 Outputs 1
1.7 Enclosure Specifications 1

Panel Features
2.1 Description....2
2.2 Zone Expansion 2
2.3 Output Expansion 2
2.4 Central Station Communication....2
2.5 Encrypted Communications (XR500N/XR500E only)....2
2.6 Caution Notes 3
2.7 Compliance Instructions....3

System Components
3.1 Description....3
3.2 Wiring Diagram 4
3.3 Lightning Protection....5
3.4 Accessory Devices 5
3.4 Accessory Devices (continued)....6

Installation
4.1 Mounting the Enclosure....7
4.2 Mounting Keypads and Zone Expansion Modules....8

Primary Power Supply
5.1 AC Terminals 1 and 2....9
5.2 Transformer Types....9

Secondary Power Supply
6.1 Battery Terminals 3 and 4 10
6.2 Earth Ground (GND) 10
6.3 Battery Only Restart 10
6.4 Battery Replacement Period....10
6.5 Discharge/Recharge....10
6.6 Battery Supervision....10
6.7 Battery Cutoff....10
6.8 XR500 Series Power Requirements....11
6.9 Standby Battery Selection 13

Bell Output
7.1 Terminals 5 and 6....14

Keypad Bus
8.1 Description....14
8.2 Terminal 7 - RED 14
8.4 Terminal 9 - GREEN 14
8.5 Terminal 10 - BLACK 14
8.6 J8 Programming Connection....14
8.7 OVC LED....14

Smoke and Glassbreak Detector Output
9.1 Terminals 11 and 12 14
9.2 Current Rating....14

Protection Zones
10.1 Terminals 13–24....15
10.2 Operational Parameters....15
10.3 Zone Response Time....15
10.4 Keyswitch Arming Zone....15

Powered Zones for 2-Wire Smoke Detectors
11.1 Terminals 25–26 and 27–28 15
11.2 Compatible 2-Wire Smoke Detector Chart....16

Dry Contact Relay Outputs
12.1 Description....17
12.2 Contact Rating 17
12.3 Model 431 Output Harness Wiring....17

Annunciator Outputs
13.1 Description....17
13.2 Model 300 Harness Wiring....17
13.3 Model 860 Relay Module 17

J23 6-Pin Header
14.1 Description....18

J22 LX-Bus Expansion Connector
15.1 Description....18
15.2 J22 LX-Bus Header 18
15.3 LX-Bus Interface Cards....19
15.4 LX-Bus LEDs....19
15.5 OVC LED....19

J21 Serial Connector
16.1 Description....19
16.2 Computer Connection to J21 19
16.3 Direct iCOM Connection to J21 20
16.4 Serial Connector LEDs....20

J1 Ethernet Connector (XR500N/XR500E only)
17.1 Description....20
17.2 Ethernet LEDs 20

J3 Telephone RJ Connector
18.1 Description....20
18.2 J10 893A Connector....20
18.3 Notification 20
18.4 Phone Line Monitor....20
18.5 FCC Registration....21

Reset and Tamper Headers
19.1 J16 Reset Header 22
19.2 J4 Tamper Header 22

Listed Compliance Specifications
20.1 Introduction 23

Universal Burglary Specifications
21.1 Introduction 23
21.2 Wiring....23
21.3 Control Outside of Protected Area....23
21.4 Police Station Phone Numbers 23
21.5 Bypass Reports....23
21.6 System Maintenance....23
21.7 Listed Receivers....23
21.8 Power Supply Supervision 23
21.9 Wireless Tamper....23
21.10 Wireless External Contact....23
21.11 Wireless Supervision Time....23
21.12 Detect Wireless Jamming 23

Area Information

22.1 Ownership 24
22.2 Annunciation 24
22.3 Trouble Display 24
22.4 Closing Wait 24
22.5 Local Bell Supervision 24

Household Burglar-Alarm System Units ANSI/UL 1023

23.1 Audible Devices 24
23.2 Auxiliary Circuits 24
23.3 Bell Cutoff 24
23.4 Entry Delay 24
23.5 Exit Delay 24
23.6 Weekly Test 24
23.7 Wireless Audible Annunciation Option 24

Central-Station and Proprietary Burglar-Alarm Units ANSI/UL 1610 AND ANSI/UL 1076

24.1 Opening/Closing Reports 24
24.2 Closing Wait 24
24.3 Entry Delay 24
24.4 Exit Delay 25
24.5 Proprietary Dialer 25
24.6 DACT Central Station 25
24.7 Bell Cutoff 25
24.8 Standard or Encrypted Line Security 25
24.9 Wireless Audible Annunciation Option 25
24.10 Model 463G or CellCom, CELL Only, Standard or Encrypted Line Security 25
24.11 Model 463G or CellCom, NET with CELL as Alternate Primary and Dialer Backup, Standard or Encrypted Line Security 26
24.12 Model 463G or CellCom, NET with CELL as Backup and Adaptive Primary, Standard or Encrypted Line Security 26

Holdup Alarm Units ANSI/UL 636

25.1 ANSI/UL 1610 Required 27
25.2 1100X Wireless Receiver 27
25.3 Wireless Supervision Time 27
25.4 LED Display 27
25.5 Jamming Detection 27
25.6 Local Alarm 27
25.7 Message to Transmit 27
25.8 Wireless Audible Annunciation Option 27

Digital Burglar Alarm Communicator System Units ANSI/UL 1635

26.1 System Trouble Display 27
26.2 Digital Dialer Telephone Number 27
26.3 Test Time 27
26.4 Closing Wait 27

Police Station Connected and Local Burglar Alarm Units ANSI/UL 365

27.1 System Trouble Display 27
27.2 Entry Delay 27
27.3 Exit Delay 27
27.4 Bell 28
27.5 Bell Cutoff 28
27.6 Automatic Bell Test 28

27.7 Standard or Encrypted Line Security....28
27.8 Wireless Audible Annunciation Option....28
27.9 Model 463G or CellCom, CELL Only, Standard or Encrypted Line Security....28
27.10 Model 463G or CellCom, NET with CELL as Alternate Primary and Dialer Backup, Standard or Encrypted Line Security....29
27.11 Model 463G or CellCom, NET with CELL as Backup and Adaptive Primary, Standard or Encrypted Line Security....29

Police Station Connected and Local Burglar Alarm Units ANSI/UL 609

28.1 Mercantile....29
28.2 Entry Delay....29
28.3 Exit Delay....29
28.4 Mercantile Safe and Vault....30
28.5 Bell....30
28.6 Bank Safe and Vault (XR500N/XR500E only)....30
28.7 Wireless Audible Annunciation Option....30

Access Control System Units ANSI/UL 294

29.1 Panel Designation....30
29.2 Tamper Protection....30
29.3 Compatible Devices....30

Universal Fire Alarm Specifications

30.1 Introduction....31
30.2 Wiring....31
30.3 Transformer....31
30.4 End-of-Line Resistor....31
30.5 System Trouble Display....31
30.6 Fire Display....31
30.7 Police Station Phone Number....31
30.8 System Maintenance....31
30.9 Audible Alarm....31
30.10 Fire Zone Programming....31
30.11 Class A Style D Zones....31
30.12 Listed Receivers....31

Control Units for Fire-Protective Signaling Systems ANSI/UL 864, NFPA 72

31.1 Power Supply....32
31.2 Zone Restoral Reports....32
31.3 Power Fail Delay....32
31.4 Sprinkler Supervisory....32
31.5 DACT Systems....32
31.6 Local Protective Signaling Systems....33
31.7 Remote Station Protective Signaling Systems....33
31.8 Fire Protective Signaling Systems using Internet/Intranet/Cell Networks....33
31.9 Combination Systems....33
31.10 Remote Annunciators....33
31.11 Notification Appliances....34
31.12 Cross Zoning....34
31.13 Ground Fault....34
31.14 Wireless Testing....34

Household Fire Warning System Units ANSI/UL 985, NFPA 72

32.1 Bell Output Definition....34
32.2 Audible Devices....34
32.3 Auxiliary Circuits....34
32.4 Bell Cutoff....34

32.5 Detect Wireless Jamming 34
32.6 Wireless External Contact....34
32.7 Wireless Supervision Time....34
32.8 Wireless Fire Verification 34

California State Fire Marshal Specifications
33.1 Bell Output Definition....35

New York City (MEA) Specifications
34.1 Introduction 35
34.2 Digital Dialer and Network Communication 35
34.3 Wiring....35
34.4 Communication Programming....35
34.5 Additional Requirements 35

False Alarm Reduction Programmable Options *
35.1 Shipping Defaults and Recommended Programming for ANSI/SIA CP-01-2000 36
35.2 Call Waiting (ANSI/SIA CP-01-2000)....37
35.3 Occupied Premise (ANSI/SIA CP-01-2000)....37
35.4 Entry Delay (ANSI/SIA CP-01-2000)....37
35.5 Minimum Installation Requirements (ANSI/SIA CP-01-2000) 37

ULC S304 Specifications
36.1 Level V Communication....37

Wiring Diagrams
37.1 866 with NAC Extender 38
37.2 866 Class B Style W using Single Notification Appliance....39
37.3 866 Class B Style W Multiple Notification Appliance Circuit....40
37.4 866 Class B Style W Dual Notification Appliance Circuits 41
37.5 865 Class B Style W using Single Notification Appliance....42
37.6 865 Class B Style W Multiple Notification Appliance Circuit....43
37.7 865 Class B Style W Dual Notification Appliance Circuits 44
37.8 865 Class A Style X using Single Notification Appliance....45
37.9 867 Class B Style W using Single Notification Appliance....46
37.10 867 Class B Style W Multiple Notification Appliance Circuit....47
37.11 867 Class B Style W Multiple Notification Appliance Circuits 48
37.12 Panel Slave Communicator for FACP using 630F Annunciator ...49
37.13 Panel Slave Communicator for FACP using Outputs 50
37.14 Dual Style D Zone Module Installation 51
37.15 Derived Channel Installation Using Bosch D8122....52
37.16 Rothenbuhler 5110 High Security Bell Wiring 53
37.17 LX-Bus™ Module Connection 54
37.18 Model 860 Relay Module Connection 55
37.19 Powered Burglary Devices....55

Revisions to This Document

Listings and Approvals

Product Specifications Summary

1.1 Power Supply

Transformer Input: Model 327, plug-in — Primary input: 120 VAC, 60 Hz, Secondary output: 16.5 VAC 50 VA
Model 322, wire-in — Primary input: 120 VAC, 60 Hz, Secondary output: 16 VAC 56 VA

Standby Battery: 12 VDC, 1.0 Amps Max. charging current
Models 365, 366, 367, 368, or 369
Replace every 3 to 5 years

***** Auxiliary: 12 VDC output at 1.5 Amp Max

***** Bell Output: 12 VDC at 1.5 Amp Max

Note: The combined Auxiliary and Bell outputs total cannot exceed 3 Amps with a 50 VA or 56 VA Transformer. All circuits are inherent Power Limited except the red battery wire and AC terminal.

*** For Commercial Fire installations, see the Compliance Instructions section.**

1.2 Communication

Built-in network communication to DMP Model SCS-1R Receivers (XR500N/XR500E only)
Built-in encrypted communication to iCOM-E™ Encrypted Network Alarm Router (XR500E only)
Built-in dialer communication to DMP Model SCS-1R Receivers
Built-in Contact ID communication to non-DMP receivers
Optional 893A Dual Phone Line Module with phone line supervision
Can operate as a local panel

1.3 Panel Zones

Eight 1k Ohm EOL burglary zones (zones 1 to 8)
Two 3.3k Ohm EOL powered zone with reset (zones 9 and 10)

1.4 Keypad Bus

You can connect up to 16 of the following supervised keypads and expansion modules to the keypad bus:

- Alphanumeric keypads
- Single-zone detectors
- Four- and/or single-zone expansion modules
- Access control modules

1.5 LX-Bus™

You can connect the following devices to the LX-Bus™ provided on the panel or by the DMP 481, 462N, 462P and 472 Interface Cards up to the maximum number of LX-Bus™ addresses. See Accessory Devices in section 3.4.

- Four- and/or single-zone expansion modules
- Relay output expansion modules
- Single-zone detectors
- Graphic annunciator modules

1.6 Outputs

The XR500 Series provide two Single Pole, Double Throw (SPDT) relay outputs which require the installation of two Model 305 relays, each rated 1 Amp at 30 VDC resistive (power limited sources only). A Model 431 Output Harness is required to use these outputs.

The XR500 Series panels also provide four open collector outputs rated for 50mA each. The open collector outputs provide ground connection for a positive voltage source. A Model 300 Output Harness is required to use these outputs.

1.7 Enclosure Specifications

The XR500 Series panels are shipped in an enclosure with a transformer, End-of-Line resistors, battery leads, user's guide, and programming sheets.

Enclosure Model	Size	Color(s)	Construction (Cold Rolled Steel)
350	17.5"W x 13.5"H x 3.5"D	Gray (G) or Red (R)	18-Guage
350A	17.5"W x 13.5"H x 3.75"D	Gray (G)	18-Guage with 16-Guage door
341	12.75"W x 6.55"H x 2.9"D	Gray (G)	20-Guage
352X	14.5"W x 32.0"H x 4.0"D	Gray (G)	16-Guage

Panel Features

2.1 Description

The DMP XR500 Series Command Processor™ Panel is a versatile 12 VDC, combined access control, burglary, and fire communicator panel with battery backup. The XR500 Series provides eight on-board burglary zones and two on-board 12 VDC Class B powered zones. The powered zones have a reset capability to provide for 2-wire smoke detectors, relays, or other latching devices. The XR500 Series can communicate to one or two DMP SCS-1R Receivers using digital dialer or network communication, or to non-DMP receivers using the Contact ID format.

2.2 Zone Expansion

Up to 574 additional zones are available on the XR500 Series using DMP LCD keypad remote zone capability and zone expansion modules. The panel keypad data bus supports up to sixteen supervised device addresses with each address supporting up to four programmable expansion zones.

Up to 500 zones are available using the on board LX-Bus, Model 461 Interface Adaptor with 481, 462N, 462P, 463G, and 472 Interface Cards, and any combination of single, four, eight, or 16-zone expansion modules and single-zone LX-Bus™ detectors.

Note: Do not use shielded wire for LX-Bus or Keypad Bus circuits.

2.3 Output Expansion

In addition to the two SPDT relays and four programmable open collector outputs on the XR500 Series, you can also connect up to 25 programmable Model 716 Output Expansion Modules to each LX-Bus. These modules can provide an additional 500 programmable SPDT relays.

The XR500 Series provides 100 Output Schedules you can use for programming the 716 to perform a variety of annunciation and control functions. You can also assign the 716 outputs to any panel Output Options such as Fire Alarm, Communication Fail, or Phone Trouble Outputs. Refer to the 716 Installation Guide (LT-0183).

The LX-Bus™ also supports the Model 717 Graphic Annunciator Module. Each 717 module supplies 20 switched ground outputs that follow the state of their assigned zones.

Note: The 717 supports the first eight Keypad Bus addresses. To follow Keypad Bus addresses nine through 16, install multiple 716 modules. Refer to the 717 Installation Guide (LT-0235) and 716 Installation Guide (LT-0183).

2.4 Central Station Communication

You can program the XR500 Series panel for reporting to DMP SCS-1R Receivers using digital dialer or network communication. The panel can also communicate to non-DMP receivers using the Contact ID communication format. The XR500 Series connects at the premises to a standard RJ31X or RJ38X telephone jack. Use the DMP 893A Dual Phone Line Module when connecting the XR500 Series panel to two separate phone lines in fire or burglary applications.

2.5 Encrypted Communications (XR500N/XR500E only)

An XR500E panel communicates using AES encryption. If you currently have an XR500N panel installed, you may contact DMP Customer Service with the panel serial number. The serial number(s) should be sent in writing via e-mail or fax. A separate feature key is sent for each panel to activate encrypted communications using the Feature Upgrade process. Encrypted communication cannot be enabled on a standard XR500 panel. For more information on the Feature Upgrade process see the XR500 Series Programming Guide (LT-0679).

2.6 Caution Notes

Throughout this guide you will see caution notes containing information you need to know when installing the panel. These cautions are indicated with a yield sign. Whenever you see a caution note, make sure you completely read and understand its information. Failing to follow the caution note can cause damage to the equipment or improper operation of one or more components in the system. See the example shown below.

Always ground the panel before applying power to any devices: The XR500 Series must be properly grounded before connecting any devices or applying power to the panel. Proper grounding protects against Electrostatic Discharge (ESD) that can damage system components.

2.7 Compliance Instructions

For applications that must conform to a local authorities installation standard or a National Recognized Testing Laboratory certificated system, please see the Wiring Diagrams for Notification Appliances and the Listed Compliance Specifications section near the end of this guide for additional instructions.

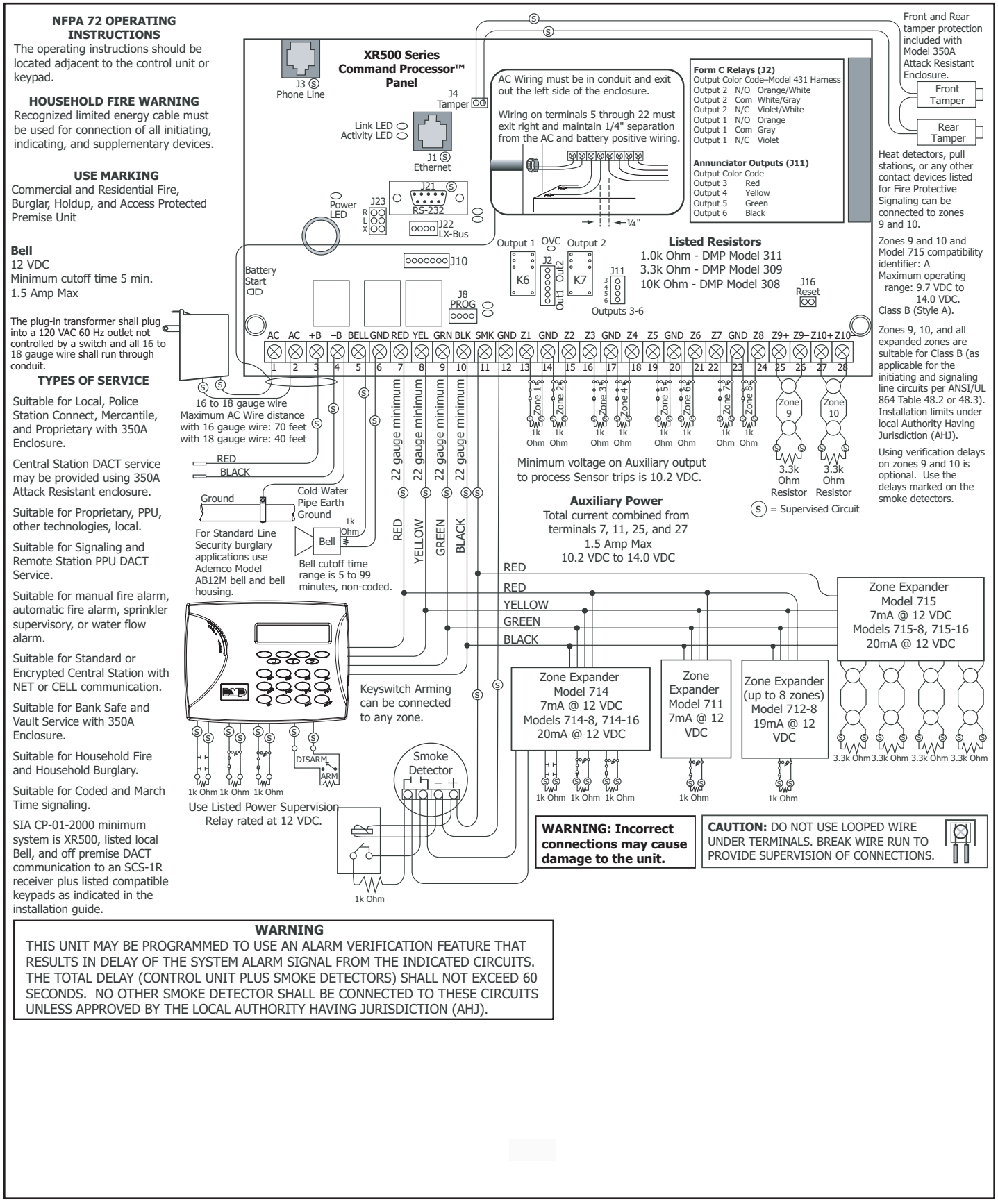
System Components

3.1 Description

The DMP XR500 Series system is made up of an alarm panel with a built-in communicator, an enclosure, battery, one 16.5 VAC transformer, and keypads. You can use up to sixteen supervised 32-character LCD keypads; network communications and expansion interface cards; zone and output expansion modules; and initiating and indicating circuit modules. You can also connect auxiliary devices to the panel's output relays to expand the basic system control capability. Combined current requirements of additional modules may require an auxiliary power supply. Refer to the XR500 Series Power Requirements section in this guide when calculating power requirements.

3.2 Wiring Diagram

The XR500 Series diagram below shows some of the accessory modules you can connect for use in various applications. A brief description of each module follows in section 3.4.


NFPA 72 OPERATING INSTRUCTIONS
The operating instructions should be located adjacent to the control unit or keypad.
HOUSEHOLD FIRE WARNING
Recognized limited energy cable must be used for connection of all initiating, indicating, and supplementary devices.
USE MARKING
Commercial and Residential Fire, Burglar, Holdup, and Access Protected Premise Unit
Bell
12 VDC
Minimum cutoff time 5 min.
1.5 Amp Max
The plug-in transformer shall plug into a 120 VAC 60 Hz outlet not controlled by a switch and all 16 to 18 gauge wire shall run through conduit.
TYPES OF SERVICE
Suitable for Local, Police Station Connect, Mercantile, and Proprietary with 350A Enclosure.
Central Station DACT service may be provided using 350A Attack Resistant enclosure.
Suitable for Proprietary, PPU, other technologies, local.
Suitable for Signaling and Remote Station PPU DACT Service.
Suitable for manual fire alarm, automatic fire alarm, sprinkler supervisory, or water flow alarm.
Suitable for Standard or Encrypted Central Station with NET or CELL communication.
Suitable for Bank Safe and Vault Service with 350A Enclosure.
Suitable for Household Fire and Household Burglary.
Suitable for Coded and March Time signaling.
SIA CP-01-2000 minimum system is XR500, listed local Bell, and off premise DACT communication to an SCS-1R receiver plus listed compatible keypads as indicated in the installation guide.
XR500 Series Command Processor™ Panel
J3 Phone Line
J4 Tamper
Link LED
Activity LED
J1 Ethernet
J21 RS-232
J23
J22 LX-Bus
Power LED
J10
J8 PROG
Battery Start
AC Wiring must be in conduit and exit out the left side of the enclosure.
Wiring on terminals 5 through 22 must exit right and maintain 1/4" separation from the AC and battery positive wiring.
¼"
Form C Relays (J2)
Output Color Code–Model 431 Harness
Output 2 N/O Orange/White
Output 2 Com White/Gray
Output 2 N/C Violet/White
Output 1 N/O Orange
Output 1 Com Gray
Output 1 N/C Violet
Annunciator Outputs (J11)
Output Color Code
Output 3 Red
Output 4 Yellow
Output 5 Green
Output 6 Black
Output 1 OVC Output 2
K6 J2 K7
Out1 Out2
J11
Outputs 3-6
Listed Resistors
1.0k Ohm - DMP Model 311
3.3k Ohm - DMP Model 309
10K Ohm - DMP Model 308
J16 Reset
Front and Rear tamper protection included with Model 350A Attack Resistant Enclosure.
Front Tamper
Rear Tamper
Heat detectors, pull stations, or any other contact devices listed for Fire Protective Signaling can be connected to zones 9 and 10.
Zones 9 and 10 and Model 715 compatibility identifier: A
Maximum operating range: 9.7 VDC to 14.0 VDC.
Class B (Style A).
Zones 9, 10, and all expanded zones are suitable for Class B (as applicable for the initiating and signaling line circuits per ANSI/UL 864 Table 48.2 or 48.3). Installation limits under local Authority Having Jurisdiction (AHJ).
Using verification delays on zones 9 and 10 is optional. Use the delays marked on the smoke detectors.
AC AC +B –B BELL GND RED YEL GRN BLK SMK GND Z1 GND Z2 Z3 GND Z4 Z5 GND Z6 Z7 GND Z8 Z9+ Z9– Z10+ Z10–
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Zone 1
Zone 2
Zone 3
Zone 4
Zone 5
Zone 6
Zone 7
Zone 8
Zone 9
Zone 10
1k Ohm
3.3k Ohm Resistor
16 to 18 gauge wire
Maximum AC Wire distance with 16 gauge wire: 70 feet with 18 gauge wire: 40 feet
RED
BLACK
Ground
Cold Water Pipe Earth Ground
For Standard Line Security burglary applications use Ademco Model AB12M bell and bell housing.
Bell
Bell cutoff time range is 5 to 99 minutes, non-coded.
22 gauge minimum
RED
YELLOW
GREEN
BLACK
Minimum voltage on Auxiliary output to process Sensor trips is 10.2 VDC.
Auxiliary Power
Total current combined from terminals 7, 11, 25, and 27
1.5 Amp Max
10.2 VDC to 14.0 VDC
S = Supervised Circuit
Keyswitch Arming can be connected to any zone.
DISARM
ARM
Smoke Detector
Use Listed Power Supervision Relay rated at 12 VDC.
Zone Expander Model 714
7mA @ 12 VDC
Models 714-8, 714-16
20mA @ 12 VDC
Zone Expander Model 711
7mA @ 12 VDC
Zone Expander (up to 8 zones) Model 712-8
19mA @ 12 VDC
Zone Expander Model 715
7mA @ 12 VDC
Models 715-8, 715-16
20mA @ 12 VDC
3.3k Ohm
WARNING: Incorrect connections may cause damage to the unit.
CAUTION: DO NOT USE LOOPED WIRE UNDER TERMINALS. BREAK WIRE RUN TO PROVIDE SUPERVISION OF CONNECTIONS.

WARNING

THIS UNIT MAY BE PROGRAMMED TO USE AN ALARM VERIFICATION FEATURE THAT RESULTS IN DELAY OF THE SYSTEM ALARM SIGNAL FROM THE INDICATED CIRCUITS. THE TOTAL DELAY (CONTROL UNIT PLUS SMOKE DETECTORS) SHALL NOT EXCEED 60 SECONDS. NO OTHER SMOKE DETECTOR SHALL BE CONNECTED TO THESE CIRCUITS UNLESS APPROVED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ).

Figure 1: XR500 Series Wiring Diagram

3.3 Lightning Protection

Metal Oxide Varistors and Transient Voltage Suppressors help protect against voltage surges on XR500 Series input and output circuits. Additional surge protection is available by installing the DMP 370 or 370RJ Lightning Suppressors.

3.4 Accessory Devices

Interface Adaptor and Interface Cards	
461 Interface Adaptor Card	Allows you to connect two or more expansion interface cards to the XR500 Series panel. The 461 is an expansion mother board that plugs into the panel J6 Interface Connector and is required when using two or more Interface Cards. Use combinations of Interface Cards for expanding zones, network interfacing, local printing, and connecting wireless devices.
462N Network Interface Card	Allows you to connect the XR500 Series to any compatible data network and use its communication capability in place of standard dial out telephone lines. The 462N also provides an LX-Bus™ for connecting zone and output expansion modules to the panel.
462P Printer Interface Card	Allows you to connect the XR500 Series to any compatible serial printer providing the user with real-time event recording. The 462P also provides an LX-Bus™ for connecting zone and output expansion modules.
463G Digital Cellular Communicator Card	Allows you to connect the XR500 Series to any compatible GPRS/SMS network and use its communication in place of standard dial out lines. The 463G also provides an LX-Bus™ for connecting zone and output expansion modules to the panel.
472 Wireless Interface Card	Provides one LX-Bus for connecting up to 200 wireless or hardwired zone expansion modules.
481 Expansion Interface Card	Provides one LX-Bus for connecting up to 100 zone and output expansion modules.
Expansion Modules	
710/710F Bus Splitter/Repeater	Allows you to increase keypad or LX-Bus™ wiring distance to 2500 feet. Model 710F is for 24 VDC applications.
711 Single Point Zone Expanders	Provides one Class B zone for connecting burglary devices.
714, 714-8, 714-16 Zone Expanders	Provides Class B zones for connecting burglary and non-powered fire devices.
712-8 Zone Expander	Provides Class B zones for connecting burglary devices.
715, 715-8, 715-16 Zone Expanders	Provides 12 VDC Class B powered zones for connecting smoke detectors, glassbreak detectors, and other 2- or 4-wire devices.
725 Zone Expanders	Provides 24 VDC Class B powered zones for connecting smoke detectors, glassbreak detectors, and other 2- or 4-wire devices. Requires 710F Bus Splitter/Repeater.
716 Output Expander	Provides four Form C relays (SPDT) and four switched grounds (open collector) for use in a variety of remote annunciation and control applications for use on the LX-Bus only.
717 Graphic Annunciator Module	Provides 20 zone following annunciator outputs (open collector) for use in a variety of remote annunciation and control applications for use on the LX-Bus only.
733, 734 Wiegand Interface Module	Provides system codeless entry, and arming and disarming using access control readers.
CellCom Series Digital Cellular Communicator	Provides a fully supervised alarm communication path over the GSM/GPRS network.
DMP Two-Way Wireless Devices	
1100X/*1100XH/*1100XI Wireless Receiver	Supports up to 500 devices in residential or commercial wireless operation.
1101 Universal Transmitter	Provides both internal and external contacts that may be used at the same time to yield two individual reporting zones from one wireless transmitter.
1102 Universal Transmitter	Provides an external contact.
* 1114 Four-Zone Expander	Provides four wireless zones
* 1116 Relay Output	Provides one Form C relay
* 1117 LED Annunciator	Provides a visual system status indicator
* 1118 Remote Indicator Light	Provides a visual indication of a Panic situation
***** 1121 PIR Motion Detector	Provides motion detection with pet immunity.
1125 PIR Motion Detector	Provides multiple lens configurations, dual coverage area selection, and sensitivity adjustments.
***** 1129 Glassbreak Detector	Detects the shattering of framed glass mounted in an outside wall and provides full-pattern coverage and false-alarm immunity.

3.4 Accessory Devices (continued)

DMP Two-Way Wireless Devices (continued)	
***** 1131 Recessed Contact	Provides a recessed contact option for door or window applications.
***** 1139 Bill Trap	Provides a silent alarm option for retail and banking cash drawers.
1142BC Two-button Hold-up Belt Clip Transmitter	Provides two-button hold-up operation with a belt clip.
1142 Two-button Hold-up Transmitter	Provides permanently mounted under-the-counter two-button hold-up operation.
***** 1145 (Four-Button) ***** 1146 (Two-Button) ***** 1147 (One-Button)	Key Fob transmitters designed to clip onto a key ring or lanyard.
1161 Residential Smoke Detector	Residential smoke detector with sounder.
1162 Residential Smoke/Heat Detector	Residential smoke/heat detector with sounder and fixed rate-of-rise heat detector.
1165 Commercial Smoke Detector	Commercial smoke detector.
1165H Commercial Smoke/Heat Detector	Commercial smoke/heat detector with fixed rate-of-rise heat detector.
1165HS Commercial Smoke/Heat Detector and Sounder	Commercial smoke/heat detector with fixed rate-of-rise heat detector and sounder.
1181 PIV	Commercial Post Indicator Valve (PIV)
1182 OS&Y	Commercial Outside Screw and Yoke Valve (OS&Y)
*** This device has not been investigated and shall not be used in listed installations.**	
Indicating and Initiating Devices	
865 Supervised Style W or X Notification Circuit Module	Provides supervised alarm current when using the XR500 Series panel bell output and up to 5 Amps at 12 or 24 VDC when using a listed auxiliary power supply. The 865 can supervise 2-wire or 4-wire style circuits for opens and shorts with individual LED annunciation.
866 Style W Notification Circuit Module	Provides supervised alarm current using the XR500 Series panel bell output and up to 5 Amps at 12 or 24 VDC when using a listed auxiliary power supply. The 866 can supervise 2-wire Style W circuits for opens and shorts.
867 Style W LX-Bus Notification Circuit Module	Provides supervised alarm current using the XR500 Series panel bell output and up to 5 Amps at 12 or 24 VDC when using a listed auxiliary power supply. The 867 connects to the XR500 Series panel LX-Bus™ and provides one 2-wire Style W notification circuit for open and short conditions. Individual Bell Relay addresses Bell Ring styles.
869 Dual Class A Style D Initiating Module	Provides two Class A, Style D, 4-wire initiating zones for connecting waterflow switches and other non-powered fire and burglary devices.
Accessory Modules and Keypads	
893A Dual Phone Line Module	Allows you to supervise two standard phone lines connected to an XR500 Series panel. The 893A module monitors the main and backup phone lines for a sustained voltage drop and alerts users when the phone line is bad.
***** ePAD™ Virtual Keypads	Allows users to control the security system from any computer using the Internet.
iCOM™ Network Alarm Router	Allows the XR500 panel to send signals through the Internet/Ethernet.
iCOM-E™ High-Security Network Alarm Router	Allow the XR500 panel to send encrypted signals through the Internet/Ethernet. For use when the Advanced Encryption Standard (AES) Encryption Algorithm is required. The iCOM-E is NIST certified.
LCD keypads	Allows you to control the panel from various remote locations. Connect up to sixteen supervised Model 630F Remote Fire Command Center, Model 690, 790, 693/793 Security Command™ keypads, 7060, 7063, 7070, 7073, 7160, 7163, 7170, 7173 Thinline™ keypads, 7060A, 7063A, 7070A, 7073A Aqualite™ keypads, or 7760 Clear Touch™ keypad to the keypad bus using terminals 7, 8, 9, and 10.
Addressable Smoke Detectors	
521LX, 521LXT	Single-zone, addressable conventional smoke, smoke/heat detectors that connect to the LX-Bus. Includes remote maintenance reporting, drift compensation, and multi-criteria detection.
*** This device has not been investigated and shall not be used in listed installations.**	

Installation

4.1 Mounting the Enclosure

The metal enclosure for the XR500 Series must be mounted in a secure, dry place to protect the panel from damage due to tampering or the elements. It is not necessary to remove the XR500 Series PCB when installing the enclosure. Figure 2 shows the mounting hole locations for the Model 350/350A Enclosures. Figure 3 shows the Model 341 Small Enclosure. Figure 4 shows the Model 352X panel cabinet and 352S shelf cabinet for multiple batteries.

Note: When using the XR500 Series panel for listed applications, use the Model 350, 349, 341, or 352S enclosure for standby batteries. When using the 352X or 352S in listed applications, the enclosure must be surface mounted on the wall.

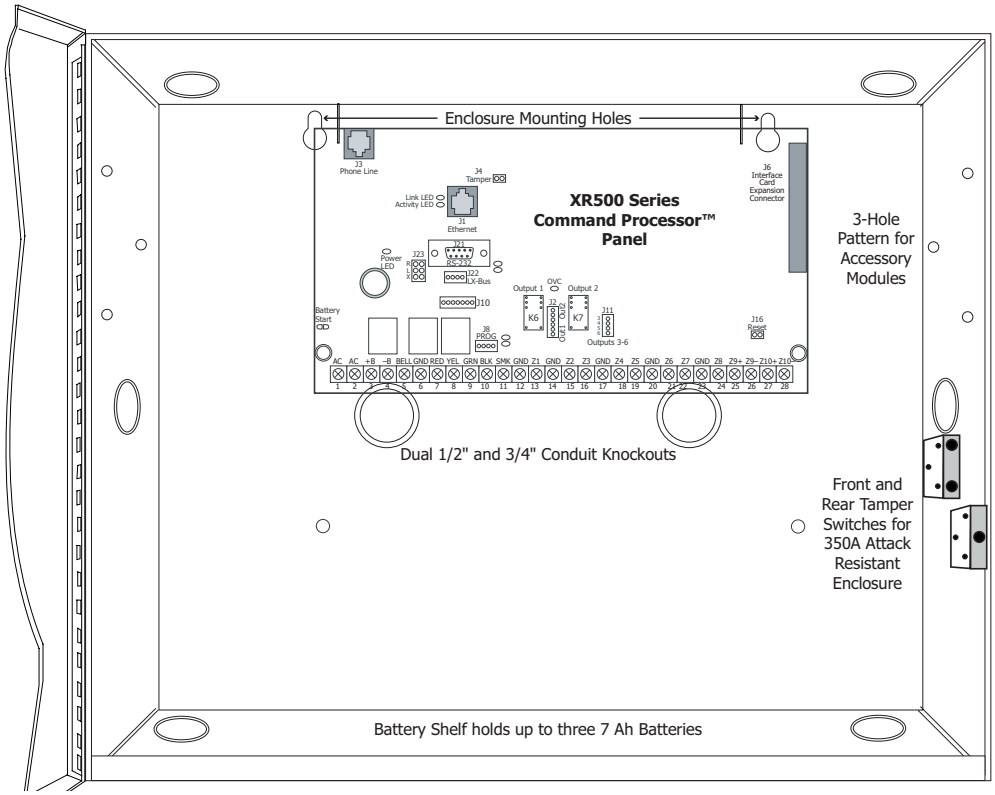


Figure 2: XR500 Series in Model 350 or 350A Enclosure

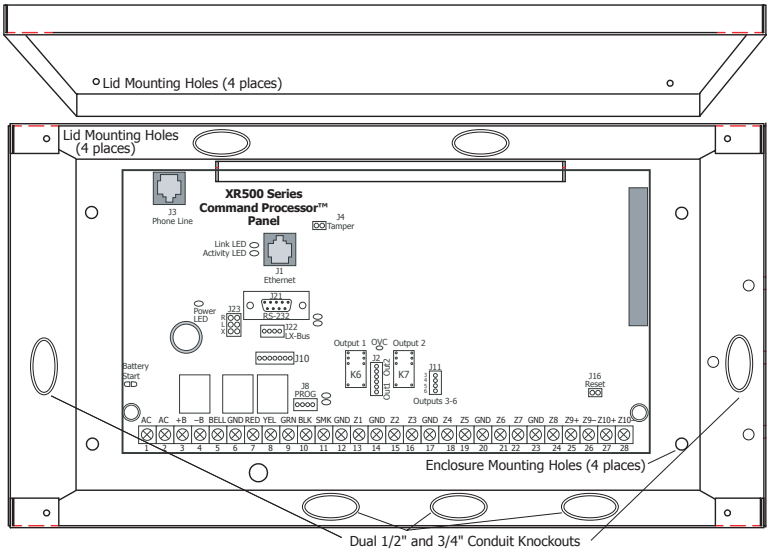


Figure 3: XR500 Series in Model 341 Enclosure

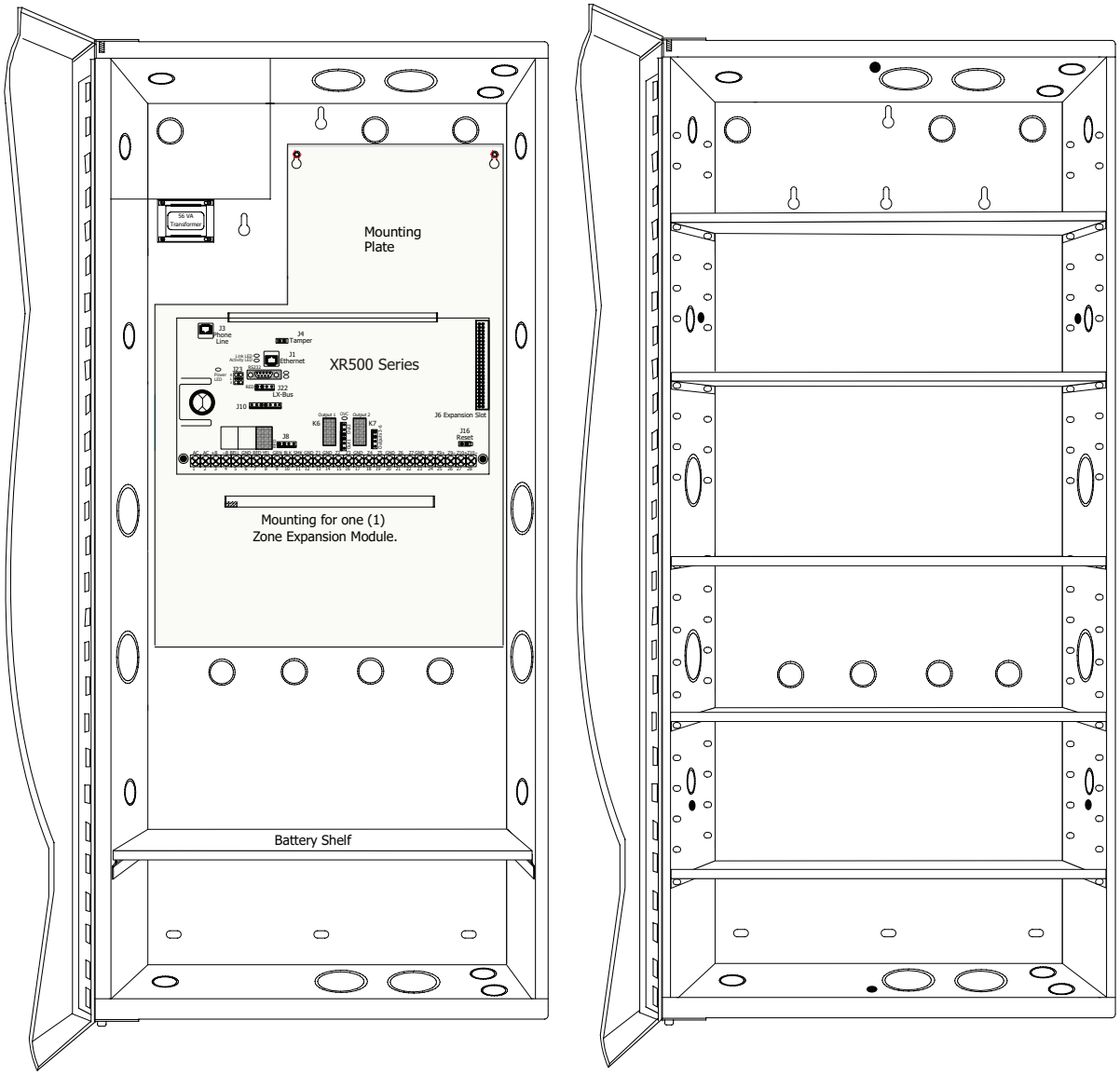


Figure 4: XR500 Series in Model 352X Enclosure and Separate 352S Enclosure with Shelves

4.2 Mounting Keypads and Zone Expansion Modules

DMP LCD keypads have removable covers that allow you to easily mount the keypad to a wall or other flat surface using the screw holes on each corner of the base. Before mounting the base, connect the keypad wire harness leads to the keypad cable from the panel and to any device wiring run to that location. Then attach the harness to the pin connector on the PC board, mount the base, and install the keypad cover making sure all of the keys extend through their respective holes.

For mounting keypads on solid walls, or for applications where conduit is required, use the Model 695 1-1/2" deep or the Model 696 1/2" deep backboxes.

The DMP 711, 712-8, 714, 715, 716, and 717 modules are each contained in molded plastic housings with removable covers. The base provides you with mounting holes for installing the unit to a wall, switch plate, or other surface.

4.3 Connecting LX-Bus and Keypad Bus Devices

Several factors determine the DMP LX-Bus™ and keypad bus performance characteristics: the wire length and gauge used, the number of devices connected, and the voltage at each device. When planning an LX-Bus™ and keypad bus installation, keep in mind the following information:

1. DMP recommends using 18 or 22-gauge **unshielded** wire for all keypad and LX-Bus circuits. **Do not** use twisted pair or shielded wire for LX-Bus and keypad bus data circuits.
2. On keypad bus circuits, to maintain auxiliary power integrity when using 22-gauge wire do not exceed 500 feet. When using 18-gauge wire do not exceed 1,000 feet. To increase the wire length or to add devices, install an additional power supply that is listed for Fire Protective Signaling, power limited, and regulated (12 VDC nominal) with battery backup.
   Note: Each panel allows a specific number of supervised keypads. Add additional keypads in the unsupervised mode. Refer to the panel installation guide for the specific number of supervised keypads allowed.
3. Maximum distance for any one bus circuit (length of wire) is 2,500 feet regardless of the wire gauge. This distance can be in the form of one long wire run or multiple branches with all wiring totaling no more than 2,500 feet. As wire distance from the panel increases, DC voltage on the wire decreases. Maximum number of LX-Bus devices on the first 2,500 foot circuit is 40 devices.
4. Maximum voltage drop between the panel (or auxiliary power supply) and any device is 2.0 VDC. If the voltage at any device is less than the required level, add an auxiliary power supply at the end of the circuit. When voltage is too low, the devices cannot operate properly.

For additional information refer to the LX-Bus/Keypad Bus Wiring Application Note (LT-2031).

Expansion Interface Cards (Models 481, 462N, 462P, 463G, and 472)

The LX-Bus provided on these cards requires only a 4-wire cable between the card and any devices connected to the bus. You can connect devices (zone or output expansion modules) together on the same cable or provide separate runs back to the card. Each LX-Bus provides up to 100 zones or outputs.

Note: Do not use twisted pair or shielded wire when connecting an LX-Bus or keypad bus.

Primary Power Supply

5.1 AC Terminals 1 and 2

Connect the transformer wires to terminals 1 and 2 on the panel. Use no more than 70 ft. of 16 gauge or 40 ft. of 18 gauge wire between the transformer and the XR500 Series.

Always ground the panel before applying power to any devices: The XR500 Series must be properly grounded before connecting any devices or applying power to the panel. Proper grounding protects against Electrostatic Discharge (ESD) that can damage system components. See the Earth ground section.

5.2 Transformer Types

Use Model 327 (16.5 VAC 50 VA) plug-in or Model 322 or 323 (16 VAC 56 VA) wire-in transformer. Use Model 322 or 323 (16 VAC 56 VA) wire-in transformer when required by the Authority Having Jurisdiction (AHJ).

The transformer must be connected to an unswitched 120 VAC 60 Hz electrical outlet with at least .87A of available current. ***Never share the transformer output with any other equipment***.

Secondary Power Supply

6.1 Battery Terminals 3 and 4

Connect the black battery lead to the negative battery terminal. The negative terminal connects to the enclosure ground internally through the XR500 Series circuit board. Connect the red battery lead to the battery positive terminal. Observe polarity when connecting the battery.

You can add a second battery in parallel using the DMP Model 318 Dual Battery Harness. **DMP requires each battery be separated by a PTC in the battery harness wiring to protect each battery from a reversal or short within the circuit. See Figure 5.**

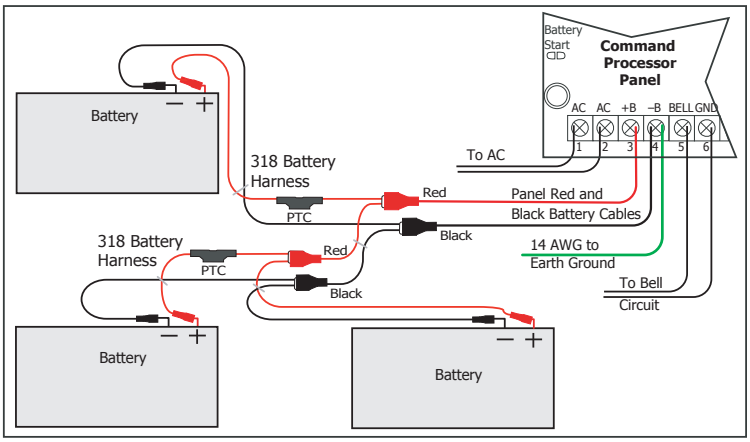


Figure 5: Wiring Multiple Batteries

For listed installations, all batteries shall be installed in a DMP Model 350 or Model 352S enclosure and all wiring shall run through conduit. The enclosure shall be installed to the left of the XR500 Series enclosure to ensure Battery and AC wire separation.

Use sealed lead-acid batteries only: Use the DMP Model 365 (12 VDC 9 Ah), DMP Model 367 (12 VDC 7.7 Ah), Model 366 (12 VDC 18 Ah), Model 368 (12 VDC 4.5 Ah), or Model 369 (12 VDC 7 Ah) sealed lead-acid rechargeable battery. Batteries supplied by DMP have been tested to ensure proper charging with DMP products.

GEL CELL BATTERIES CANNOT BE USED WITH THE XR500 SERIES PANEL.

6.2 Earth Ground (GND)

To provide proper transient suppression, XR500 Series panel terminal 4 must be connected to earth ground using 14 gauge or larger wire. DMP recommends connecting to a cold water pipe, ground rod, or building ground only. Do not connect to an electrical ground or conduit, sprinkler or gas pipes, or to a telephone company ground.

6.3 Battery Only Restart

When powering up the XR500 Series panel without AC power, briefly short across the battery start pads to pull in the battery cutoff relay. The leads need a momentary short only. Once the relay has pulled in, the battery voltage holds it in that condition. If the XR500 Series panel is powered up with an AC transformer, the battery cutoff relay is pulled in automatically. For more information refer to Figure 1.

6.4 Battery Replacement Period

DMP recommends replacing the battery every 3 to 5 years under normal use.

6.5 Discharge/Recharge

The XR500 Series battery charging circuit float charges at 13.9 VDC at a maximum current of 1.0 Amps using a 50 VA or 56 VA transformer. Listed below are the various battery voltage level conditions:

Battery Trouble:	Below	11.9 VDC
Battery Cutoff:	Below	10.2 VDC
Battery Restored:	Above	12.6 VDC

6.6 Battery Supervision

The XR500 Series tests the battery when AC power is present. The test is done every three minutes and lasts for five seconds. During the test, the panel places a load on the battery; if the battery voltage falls below 11.9 VDC a low battery is detected. If AC power is not present, a low battery is detected any time the battery voltage falls below 11.9 VDC.

If a low battery is detected with AC power present, the test repeats every two minutes until the battery charges above 12.6 VDC indicating the battery has restored voltage. If a weak battery is replaced with a fully charged battery, the restored battery will not be detected until the next two minute test is completed.

6.7 Battery Cutoff

The panel disconnects the battery any time the battery voltage drops below 10.2 VDC. This prevents battery deep discharge damage.

6.8 XR500 Series Power Requirements

During AC power failure, the XR500 Series panel and all connected auxiliary devices draw their power from the battery. All devices must be taken into consideration when calculating the battery standby capacity. The following table lists the XR500 Series panel power requirements. You must add the additional current draw of keypads, zone expansion modules, smoke detector output, and any other auxiliary devices used in the system for the total current required. The total is then multiplied by the number of standby hours required to calculate the total ampere-hours required.

Standby Battery Power Calculations	Standby Current	Alarm Current
XR500 Series Control Panel	Qty 1 x 180mA 180 mA	Qty 1 x 180mA 180 mA
Relay Outputs 1-2 (ON)	Qty _____ 30mA _____	Qty _____ 30mA _____
Switch Grounds 3-6 (ON)	Qty _____ 5mA _____	Qty _____ 5mA _____
Active Zones 1-8	Qty _____ 1.6mA _____	Qty _____ *2mA _____
Active Zones 9-10	Qty _____ 4mA _____	Qty _____ 30mA _____
2-Wire Smoke Detectors	Qty _____ 0.1mA _____	Qty _____ 0.1mA _____
Panel Bell Output		1500mA _____mA
893A Dual Phone Line Module	Qty _____ x 12mA _____	Qty _____ x 50mA _____
461 Interface Adaptor Card	7mA _____	7mA _____
462N Network Interface Card	Qty _____ x 50mA _____	Qty _____ x 50mA _____
462P Printer Interface Card	Qty _____ x 50mA _____	Qty _____ x 50mA _____
463G/CellCom Digital Cellular Communicator Card	Qty _____ x 21mA _____	Qty _____ x 21mA _____
472 FA Wireless Interface Card	Qty _____ x 85mA _____	Qty _____ x 85mA _____
481 Expansion Interface Card	Qty _____ x 15mA _____	Qty _____ x 15mA _____
1100X Wireless Receiver	Qty _____ x 46mA _____	Qty _____ x 46mA _____
1100XH Wireless High Power Receiver	Qty _____ x 160mA _____	Qty _____ x 160mA _____
1100XI Wireless In-line Receiver	Qty _____ 45mA _____	Qty _____ x 45mA _____
860 Relay Output Module (one relay active)	Qty _____ x 34mA _____	Qty _____ x 34mA _____
All four relays active	138mA _____	138mA _____
865 Style Y or Z Notification Module	Qty _____ x 26mA _____	Qty _____ x 85mA _____
866 Style W Notification Module	Qty _____ x 45mA _____	Qty _____ x 76mA _____
867 LX-Bus Style W Notification Module	Qty _____ x 30mA _____	Qty _____ x 86mA _____
869 Dual Style D Initiating Module	Qty _____ x 25mA _____	Qty _____ x 75mA _____
630F Remote Fire Command Center	Qty _____ x 63mA _____	Qty _____ x 92mA _____
690 Security Command Keypad	Qty _____ x 77mA _____	Qty _____ x 84mA _____
693/793 Easy Entry Keypad	Qty _____ x 92mA _____	Qty _____ x 120mA _____
Active Zones (EOL Installed)	1.6mA _____	Qty _____ x *2mA _____
790 Security Command Keypad	Qty _____ x 77mA _____	Qty _____ x 84mA _____
Active Zones (EOL Installed)	1.6mA _____	Qty _____ x *2mA _____
7060/7160 Thinline/7060A Aqualite Keypad	Qty _____ x 72mA _____	Qty _____ x 80mA _____
7063/7163 Thinline/7063A Aqualite Keypad	Qty _____ x 85mA _____	Qty _____ x 100mA _____
7070/7170 Thinline/7070A Aqualite Keypad	Qty _____ x 72mA _____	Qty _____ x 87mA _____
Active Zones (EOL Installed)	1.6mA _____	Qty _____ x *2mA _____
7073/7173 Thinline/7073A Aqualite Keypad	Qty _____ x 85mA _____	Qty _____ x 100mA _____
Active Zones (EOL Installed)	1.6mA _____	Qty _____ x *2mA _____
7760 Clear Touch Keypad	Qty _____ x 65mA _____	Qty _____ x 115mA _____
733 Wiegand Interface Module	Qty _____ x 30mA _____	Qty _____ x 30mA _____
Active Zones (EOL Installed)	Qty _____ x 1.6mA _____	Qty _____ x *2mA _____
Annunciator (ON)		Qty _____ x 20mA _____
734 Wiegand Interface Module	Qty _____ x 15mA _____	Qty _____ x 15mA _____
Active Zones (EOL Installed)	Qty _____ x 1.6mA _____	Qty _____ x *2mA _____
Annunciator (ON)		Qty _____ x 20mA _____
Copy Sub-Totals to next page	Sub-Total Standby _____mA	Sub-Total Alarm _____mA

*Based on 10% of active zones in alarm.

Standby Battery Power Calculations	Standby Current	Alarm Current
736P POPIT Interface Module Radionics Popex, POPITs, OctoPOPITs	Qty _____ x 25mA _____ Qty _____ x ___mA _____	Qty _____ x 25mA _____ Qty _____ x ___mA _____
738A Ademco Wireless Interface Module	Qty _____ x 75mA _____	Qty _____ x 75mA _____
710 Bus Splitter/Repeater Module	Qty _____ x 32mA _____	Qty _____ x 32mA _____
710F Fire Bus Splitter/Repeater Module	Qty _____ x 40mA _____	Qty _____ x 40mA _____
711 Zone Expansion Module Active Zone (EOL Installed)	Qty _____ x 11mA _____ Qty _____ x 1.6mA _____	Qty _____ x 11mA _____ Qty _____ x *2mA _____
714 Zone Expansion Module Active Zones (EOL Installed)	Qty _____ x 7mA _____ Qty _____ x 1.6mA _____	Qty _____ x 7mA _____ Qty _____ x *2mA _____
712-8 Zone Expansion Module Active Zones (EOL Installed)	Qty _____ x 17mA _____ Qty _____ x 1.6mA _____	Qty _____ x 17mA _____ Qty _____ x *2mA _____
714-8, 714-16 Zone Expansion Module Active Zones (EOL Installed)	Qty _____ x 20mA _____ Qty _____ x 1.6mA _____	Qty _____ x 20mA _____ Qty _____ x *2mA _____
715 Zone Expansion Module Active Zones (EOL Installed) 2-Wire Smokes	Qty _____ x 7mA _____ Qty _____ x 4mA _____ Qty _____ x .1mA _____	Qty _____ x 7mA _____ Qty _____ x *30mA _____ Qty _____ x .1mA _____
715-8, 715-16 Zone Expansion Modules Active Zones (EOL Installed) 2-Wire Smokes	Qty _____ x 20mA _____ Qty _____ x 4mA _____ Qty _____ x .1mA _____	Qty _____ x 20mA _____ Qty _____ x *30mA _____ Qty _____ x .1mA _____
716 Output Expansion Module Active Form C Relays	Qty _____ x 13mA _____	Qty _____ x 13mA _____ Qty _____ x 12mA _____
717 Graphic Annunciator Module Annunciator Outputs	Qty _____ x 10mA _____	Qty _____ x 10mA _____ Qty _____ x 1mA _____
521LX, 521LXT Smoke Detectors	Qty _____ x 8.8mA _____	Qty _____ x *28mA _____
572 Indicator LED	Qty _____ x 20mA _____	Qty _____ x 20mA _____
iCOM, iCOM-E Network Alarm Routers	Qty _____ x 78.1mA _____	Qty _____ x 78.1mA _____
Aux. Powered Devices on Terminals 7 and 11 Other than Keypads and LX-Bus Modules	_____mA	_____mA
This page only	Sub-Total Standby _____mA	Sub-Total Alarm _____mA
Sub-Totals from previous page	Sub-Total Standby _____mA	Sub-Total Alarm _____mA
*Based on 10% of active zones in alarm	Total Standby _____mA	Total Alarm _____mA

Total Standby_____mA x number of Standby Hours needed _____ = _____mA-hours
Total Alarm _____mA +_____mA-hours
Total _____mA-hours
X .001
= _____Amp-hrs Required

Refer to section 6.9 for standby battery selection.

6.9 Standby Battery Selection

To choose the type and number of batteries needed for 24, 60, or 72 hours of standby power based on the Amp Hours Required calculation from section 6.8 XR500 Series Power Requirements, perform the following:

1. Select the desired standby hours required from the table below: 24, 60, or 72 hours
2. Select the desired battery size: Model 368 (12 VDC 4.5 Ah), Model 369 (12 VDC 7 Ah), Model 367 (12 VDC 7.7 Ah), Model 365 (12 VDC 9 Ah), Model 366 (12 VDC 18 Ah).
3. Select a Max. Ah Available number that is just greater than the number calculated in Amp Hours Required.
4. Install the number of batteries shown in the corresponding No. of Batteries required column.

Example: If the Amp Hours Required calculation equals 22 Ah for 24 hours of standby time and 4.5 Ah batteries are desired, install six (6) Model 368 (12 VDC, 4.5 Ah) batteries.

Note: You can use either a Model 327 Plug-in 50 VA or Model 322 or 323 Wire-in 56 VA Transformer with any of the Number of Batteries choices listed below.

For listed installations, all batteries shall be installed in a DMP Model 341, 349, 350 or 352S enclosure and all wiring shall run through conduit. The enclosure shall be installed to the left of the XR500 Series enclosure to ensure Battery and AC wire separation.

24 hours of standby power

4.5 Ah Batteries	
Max. Ah Available	No. of Batteries
8	2
12	3
16	4
20	5
24	6
28	7
32	8
36	9
40	10

7 Ah Batteries	
Max. Ah Available	No. of Batteries
6	1
12	2
18	3
24	4
31	5
37	6
43	7

7.7 Ah Batteries	
Max. Ah Available	No. of Batteries
6	1
13	2
20	3
27	4
34	5
41	6

9 Ah Batteries	
Max. Ah Available	No. of Batteries
8	1
16	2
24	3
32	4
40	5

18 Ah Batteries	
Max. Ah Available	No. of Batteries
16	1
32	2
48	3

Note: 48 hours is the typical battery recharge time for any of the Number of Batteries shown in this section.

60 hours of standby power

7 Ah Batteries	
Max. Ah Available	No. of Batteries
13	2
20	3
27	4
33	5
40	6
47	7
54	8
60	9
67	10

7.7 Ah Batteries	
Max. Ah Available	No. of Batteries
14	2
22	3
29	4
37	5
44	6
52	7
59	8
67	9

9 Ah Batteries	
Max. Ah Available	No. of Batteries
17	2
26	3
34	4
43	5
52	6
61	7
69	8

18 Ah Batteries	
Max. Ah Available	No. of Batteries
17	1
34	2
52	3
69	4

Note: 48 hours is the typical battery recharge time for any of the Number of Batteries shown in this section.

72 hours of standby power

9 Ah Batteries	
Max. Ah Available	No. of Batteries
16	2
25	3
33	4
42	5
50	6
59	7
67	8

18 Ah Batteries	
Max. Ah Available	No. of Batteries
16	1
33	2
50	3
67	4

Note: 72 hours is the typical battery recharge time required for any of the Number of Batteries shown in this section.

Note: If the Amp Hours Required calculation is greater than any Max. Ah Available number shown on a table, then add power supply(s) to power some system devices allowing the Amp Hours Required calculation to be reduced. See the 710/710F Bus Splitter/Repeater Installation Guide (LT-0310).

Bell Output

7.1 Terminals 5 and 6

Terminal 5 supplies positive 12 VDC to power alarm bells or horns. This output can be steady, pulsed, or temporal depending upon the Bell Action specified in Bell Options. Terminal 6 is the ground reference for the bell circuit. This supervised output detects 1k Ohms or less as normal. The indicating appliance can supply this resistance. If using a horn or siren, a 1k Ohm 1/2 W EOL resistor (provided) should be added across the bell circuit to provide supervision. See the Notification Appliance section for a list of approved notification appliances and the Wiring Diagrams for connections.

Keypad Bus

8.1 Description

XR500 Series panel terminals 7, 8, 9, and 10 are for the keypad bus. You can connect up to sixteen supervised keypads and multiple unsupervised keypads to the XR500 Series. In addition to DMP LCD keypads, you can also connect any combination of zone expansion modules to the data bus. Refer to the specific device installation sheet for the maximum number of Keypad Bus devices.

Refer to the section titled LX-Bus for complete information about the LX-Bus 4-pin header and expansion slot.

Note: Do not use shielded wire for LX-Bus/Keypad Bus circuits.

8.2 Terminal 7 - RED

This terminal supplies positive 12 VDC Regulated to power DMP LCD keypads and zone expansion modules. Terminal 7 also supplies power for any auxiliary device. The ground reference for terminal 7 is terminal 10.

The output current is shared with the smoke power output on terminal 11 and Zones 9 and 10. Current draw for all connected devices must not exceed the panel maximum current rating. See Power Supply in the Compliance section for maximum current in a fire listed application.

8.3 Terminal 8 - YELLOW

Terminal 8 receives data from keypads and zone expansion modules. It cannot be used for any other purpose.

8.4 Terminal 9 - GREEN

Terminal 9 transmits data to keypads and zone expansion modules. It cannot be used for any other purpose.

8.5 Terminal 10 - BLACK

Terminal 10 is the ground reference for DMP LCD keypads, zone expansion modules, and all auxiliary devices being powered by terminal 7.

8.6 J8 Programming Connection

A 4-pin header (J8) is provided to connect a keypad when using a DMP Model 330 Programming Cable. This provides a quick and easy connection for panel programming.

You may also use the J8 Programming Header to connect Keypad Bus devices. This is an alternative to connecting keypad bus devices to terminals 7, 8, 9, and 10.

8.7 OVC LED

The Overcurrent LED (OVC) lights Red when the devices connected to the Keypad Bus and LX-Bus(es) draw more current than the panel is rated for. The OVC is located above Outputs 1 and 2 on the panel and turns a steady Red when lit. When the OVC LED lights Red, the LX-Bus(es) and Keypad bus are shut down.

Smoke and Glassbreak Detector Output

9.1 Terminals 11 and 12

Terminal 11 supplies positive 12 VDC Regulated to power 4-wire smoke detectors and other powered devices. This output can be turned off by the user for 5 seconds using the Sensor Reset User Menu option to allow latched devices to reset. Terminal 12 is the ground reference for terminal 11.

9.2 Current Rating

The Output current from terminal 11 is shared with terminals 7, 25, and 27.

The total current draw of all devices powered from the panel must be included with terminal 11 calculations and must not exceed the maximum output rating.

Protection Zones

10.1 Terminals 13–24

Zones 1 to 8 (terminals 13 to 24) on the XR500 Series panel are all grounded burglary zones. For programming purposes, the zone numbers are 1 through 8. Listed below are terminal 13 to 24 connection functions.

Terminal	Function	Terminal	Function
13	Zone 1 voltage sensing	19	Zone 5 voltage sensing
14	Ground for Zones 1 and 2	20	Ground for Zones 5 and 6
15	Zone 2 voltage sensing	21	Zone 6 voltage sensing
16	Zone 3 voltage sensing	22	Zone 7 voltage sensing
17	Ground for Zones 3 and 4	23	Ground for Zones 7 and 8
18	Zone 4 voltage sensing	24	Zone 8 voltage sensing

The voltage sensing terminal measures the voltage across a 1k Ohm End-of-Line resistor to ground. Use DMP Model 311 1k Ohm resistors. Dry contact sensing devices can be used in series (normally-closed) or in parallel (normally-open) with any of the burglary protection zones.

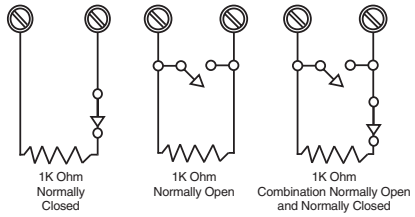


Figure 6: Protection Zone Wiring

10.2 Operational Parameters

Each protection zone detects three conditions: Open, Normal, and Short. Listed below are voltage and resistance parameters for each condition:

Condition	Resistance on zone	Voltage on positive terminal
Open	over 1300 ohms	over 2.0 VDC
Normal	600 to 1300 ohms	1.2 to 2.0 VDC
Short	under 600 ohms	under 1.2 VDC

10.3 Zone Response Time

A condition must be present on a zone for 500 milliseconds before it is detected by the XR500 Series panel. Ensure detection devices used on the protection zones are rated for use with this delay. Zones 1-10 can also be programmed for a fast response delay of 160 milliseconds.

10.4 Keyswitch Arming Zone

Using a keyswitch on an Arming type zone allows you to arm and disarm selected areas without having to enter a user code.

Powered Zones for 2-Wire Smoke Detectors

11.1 Terminals 25–26 and 27–28

Panel terminals 25 through 28 provide two resettable Class B, Style A, 2-wire powered zones. For programming purposes the zone numbers are 9 and 10.

Note: The maximum wire length for either zone 9 or zone 10 is 3000 feet using 18 AWG or 1000 feet using 22 AWG. The maximum voltage is 14 VDC and the maximum normal standby current is 1.25mA DC. The maximum line impedance is 100 Ohms. The maximum short circuit current is 56mA.

When using 725 Zone Expansion Modules, use listed Model 316 EOL resistors. The compatibility identifier for the zones using 725 Zone Expansion Modules is B. When using all other zone expansion modules, use listed Model 309 EOL resistors. The compatibility identifier for the zones is A.

Note: Do not mix detectors from different manufacturers on the same zone.

Caution: Performing a Sensor Reset momentarily drops power to the devices on Zones 9 and 10. The panel views these zones (9 and 10) as "Open" while the power is absent.

11.2 Compatible 2-Wire Smoke Detector Chart

Manufacturer	Model	Detector ID	Base	Base ID	DC Voltage Range	# of Detectors (12V/24V)	Zone Expansion Modules	Panel Zones
Detection Systems	DS230, DS230F	B/A	MB2W, MB2WL	A	8.5-33	10	725	
Detection Systems	DS250, DS250TH	B	MB2W, MB2WL	A	8.5-33	10/12	715, 715-8, 715-16, 725	9 & 10
Detection Systems	DS250HD	B	MB2W, MB2WL	A	8.5-33	10	715, 715-8, 715-16	9 & 10
Detection Systems	DS260	B/A	MB2W, MB2WL	A	8.5-33	17	725	
Detection Systems	DS282, DS282TH, DS282THC, DS282THS	B			8.5-33	10/12	715, 715-8, 715-16, 725	9 & 10
Hochiki	SLR-835B-2 SLR-835BH-2	HD-6	N/A		8-35	14	725	
Hochiki	SLR-24, SLR-24H	HD-3	NS4-220	HB-3	15-33	15	725	
Hochiki	SIJ-24, DCD-190, DCD-135	HD-3	NS4-220	HB-3	15-33	15	725	
Hochiki	SLR-24, SLR-24H	HD-3	NS6-220	HB-3	15-33	15	725	
Hochiki	SIJ-24	HD-3	NS6-220	HB-3	15-33	20	725	
Hochiki	DCD-190, DCD-135	HD-3	NS6-220	HB-3	15-33	16	725	
Sentrol/ESL	429AT, 521B, 521BXT, 521NB, 521NBXT	S09A			6.5-20	12	715, 715-8, 715-16	9 & 10
Sentrol/ESL	429C, 429CT, 521B/BXT	S10A			8.5-33	12	725	
Sentrol/ESL	429CRT, 429CST, 429CSST, 521CRXT	S11A			8.5-33	12	725	
Sentrol/ESL	711U, 712U, 713-5U, 713-6U, 721U, 721UT	S10A	701E, 70-1U, 702E, 702U	S00	8.5-33	12	725	
Sentrol/ESL	731U, 723U	S11A	701E, 701U, 702E, 702U, 702RE, 702RU	S00	8.5-33	12	725	
System Sensor	1400	A			8.5-35	10	715, 715-8, 715-16	9 & 10
System Sensor	1151, 2151	A	B110PL, B401		8.5-35	10/10	715, 715-8, 715-16, 725	9 & 10
System Sensor	1451, 2451TH	A	B401, B401B		8.5-35	10	715, 715-8, 715-16	9 & 10
System Sensor	1451DH	A	DH400		8.5-35	10	715, 715-8, 715-16	9 & 10
System Sensor	2100T, 2100B, 2100TB, 2100D, 2100TD	A			8.5-35	10	715, 715-8, 715-16	9 & 10
System Sensor	2400, 2400AT, 2400AIT, 2400TH	A			8.5-35	10	715, 715-8, 715-16	9 & 10
System Sensor	2451	A	B401, B401B, DH400		8.5-35	10	715, 715-8, 715-16	9 & 10
System Sensor	2W-B, 2WT-B	A			8.5-35	10	715, 715-8, 715-16	9 & 10
System Sensor	DH100P, DH100LP	A			8.5-35	10	715, 715-8, 715-16, 725	9 & 10

Figure 7: Compatible 2-Wire Smoke Detectors

Dry Contact Relay Outputs

12.1 Description

The XR500 Series panel provides two programmable auxiliary SPDT relays when equipped with two DMP Model 305 relays in sockets K6 (Output 1) and K7 (Output 2) and a Model 431 Output Harness on the J2 6-pin Header. Each relay provides one SPDT set of contacts that can be operated by any of the functions listed below:

1) Activation by zone condition: Steady, Pulsing, Momentary, and Follow
2) Activation by 24-hour 7-day schedule: One on and one off time a day for each relay
3) Manual activation from the DMP LCD keypad menu
4) Communication failure
5) Armed area annunciation
6) Fire Alarm, Fire Trouble or Supervisory
7) Ambush Alarm
8) Exit and Entry timers
9) System Ready
10) Late to Close

Refer to the XR500 Series Programming Guide (LT-0679) for specific information.

12.2 Contact Rating

The Model 305 relay contacts are rated for 1 Amp at 30 VDC (allows .35 power factor). You can connect auxiliary power to the Relay Output 1 common terminal by installing the gray harness wire to terminal 7. Current draw for all connected devices must not exceed the panel maximum current rating.

12.3 Model 431 Output Harness Wiring

The relay contacts are accessible by installing the DMP 431 Output Harness on the 6-pin header labeled J2. Output 2 uses the top three prongs, and Output 1 uses the bottom three prongs. The wire harness and contact locations are shown below:

Contact	Color
Output 1 normally closed	Violet
Output 1 common	Gray
Output 1 normally open	Orange
Output 2 normally closed	Violet with white stripe
Output 2 common	White with gray stripe
Output 2 normally open	Orange with white stripe

The relay contacts must be connected to devices located within the same room as the XR500 Series panel.

Annunciator Outputs

13.1 Description

The four programmable annunciator outputs can be programmed to indicate the activity of the panel zones or conditions occurring on the system. Annunciator **outputs do not provide a voltage but instead switch-to-ground** a voltage from another source. The outputs can respond to any of the conditions listed in the Description section for Dry Contact Relays. Maximum voltage is 30 VDC @ 50mA.

13.2 Model 300 Harness Wiring

Access the open collector outputs by installing DMP 300 Harness on the 4-pin header labeled J11. The output locations are shown below. For listed applications, devices connected to the outputs must be located within the same room as the panel.

Output	Color	Wire	Output	Color	Wire
3	Red	1	5	Green	3
4	Yellow	2	6	Black	4

13.3 Model 860 Relay Module

Connect a Model 860 Relay Module to the J11 on the XR500 Series panel to provide relays for outputs 3-6. Use these relays for electrical isolation between the alarm panel and other systems or for switching voltage to control various functions. Power is supplied to the relay coils from a single wire connected to the panel auxiliary power terminal 7. The module includes one relay and provides three additional sockets for expansion of up to four relays. Mount the 860 inside the panel enclosure using the 3-hole pattern and plastic standoffs. Refer to the 860 Module Install Sheet (LT-0484) as needed.

Relay Contact Rating: 1 Amp at 30 VDC (allows .35 power factor)

J23 6-Pin Header

14.1 Description

The XR500 Series Command Processor™ panel supports RS-232, LX-Bus, and DMP Wireless operation. Only one operation can function at a time. Install a jumper on one pair of J23 headers to indicate how the panel is programmed to operate. Refer to the table below when installing a jumper on J23. When a jumper is installed or moved on the 6-pin header, briefly reset the panel using the J16 jumper to activate the selected operation.

Note: Only one operation, RS-232, LX-Bus, or DMP Wireless can function at a time.

J23 6-Pin Header	
Letter	**Operation**
R	Standard RS-232
L	LX-Bus
X	1100 Series DMP Wireless

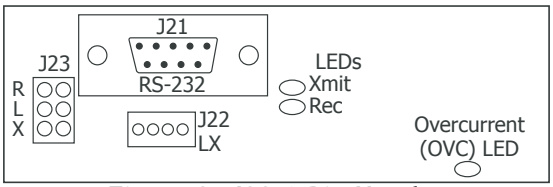


Figure 8: J23 6-Pin Header

J22 LX-Bus Expansion Connector

15.1 Description

The XR500 Series Command Processor™ Panel supports up to 500 wireless bus zones or up to five LX-Bus circuits. Each Interface card LX-Bus circuit provides 100 expansion zones. The maximum number of LX-Bus zones available on a fully populated panel is 500. Use LX-Bus J22 Header for 100 zones. Install a single Interface Card Connector on the board to support 100 additional zones for a total of 200 zones. To install up to five Interface Cards install a Model 461 Interface Adaptor Card.

15.2 J22 LX-Bus Header

Note: Only one connector, J21 or J22 can function at a time. Either use J21 to connect a serial device for PC Log Reporting, or use J22 to connect an LX-Bus or DMP Wireless device. Operation is determined by where you install the jumper on the J23 6-Pin header. See the Connecting LX-Bus and Keypad Bus Devices section for maximum wiring distances.

For each connection, respect wire colors when connecting devices and use all four wires. After placing the jumper on the J23 6-Pin header to enable the required operation, briefly reset the panel using the J16 jumper to activate operation.

Wireless Bus Operation: Place a jumper on the two pins next to the letter “X” on the J23 6-Pin header. When using J22 as a wireless bus, connect a DMP Model 300 4-wire Harness to the J22 4-pin header labeled LX. Connect the other end to the J3 header on the 1100X Wireless Receiver. This provides up to 500 wireless zones numbered 500 to 999. Refer to the 1100X Wireless Receiver Install Guide (LT-0708).

LX-Bus Operation: Place a jumper on the two pins next to the letter “L” on the J23 6-Pin header. When using J22 as an LX-Bus, connect a DMP Model 300 4-wire Harness to the J22 4-pin header labeled LX. This provides the first 100 LX-Bus zones numbered 500-599. No LX-Bus Interface Card is required.

Note: Do NOT use shielded wire when using the J22 LX-Bus Header.

RS-232 Operation: Place a jumper on the two pins next to the letter “R” on the J23 6-Pin header and refer to J21 Serial Connector.

15.3 LX-Bus Interface Cards

You can add one Interface Card (Model 481, 462N, 462P, 463G, or 472) to the XR500 Series using J6 Interface Card Connector located on the board right edge. To add more than one Interface Card install a 461 Interface Adaptor Card using J6 Interface Card Connector on the board right edge. The 461 Adaptor Card allows up to five Interface Cards to be installed. Refer to the 461 Installation Sheet (LT-0736). Each Interface card provides up to 100 LX-Bus Zones. Refer to the following tables to identify zone locations and numbers relative to J22 operation.

J22 LX-Bus Enabled (Set J23 to "L")			One Interface Card			461 Adaptor Card and Multiple Interface Cards	
LX-Bus	Zone Numbers		LX-Bus	Zone Numbers		LX-Bus	Zone Numbers
1	500-599	AND	2	600-699	OR	2 (A)	600-699
						3 (B)	700-799
						4 (C)	800-899
						5 (D)	900-999

J22 LX-Bus NOT Enabled (J23 NOT set to "L")	One Interface Card			461 Adaptor Card and Multiple Interface Cards	
	LX-Bus	Zone Numbers		LX-Bus	Zone Numbers
	1	500-599	OR	1 (A)	500-599
				2 (B)	600-699
				3 (C)	700-799
				4 (D)	800-899
				5 (E)	900-999

15.4 LX-Bus LEDs

The two LEDs, located near the bottom-right corner of J21 indicate data transmission and receipt. The top LED flashes green to indicate the panel is transmitting LX-Bus data. The bottom LED flashes yellow to indicate the panel is receiving LX-Bus data.

15.5 OVC LED

The Overcurrent LED (OVC) lights Red when the devices connected to the Keypad Bus and LX-Bus(es) draw more current than the panel is rated for. The OVC is located above Outputs 1 and 2 on the panel and turns a steady Red when lit. When the OVC LED lights Red, the LX-Bus(es) and Keypad bus shut down.

J21 Serial Connector

16.1 Description

Note: Only one connector, J21 or J22 can function at a time. Either use J21 to connect a serial device for PC Log Reporting, or use J22 to connect a DMP Wireless device or an LX-Bus device. Operation is determined by where you install the jumper on the J23 6-Pin header. The maximum line impedance is 100 Ohms.

To enable J21 to operate in RS-232 mode, place a jumper on the two pins next to the letter "R" on the J23 6-Pin header and briefly reset the panel using the J16 jumper to activate the selected operation. Panel programming using Remote Link™ can be set up through a direct connection to a computer or through an iCOM connected to a network. The Serial Connector allows the following operation options.

XR500 Panel	XR500N/XR500E Panel
PC Log Reports	PC Log Reports
Remote Link™ Programming	Additional iCOM Installed for PC Log Reports

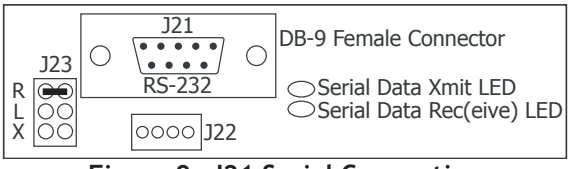


Figure 9: J21 Serial Connection

16.2 Computer Connection to J21

Use a straight through RS-232 Serial cable with a DB-9 female connector on one end and a DB-9 male connector on the other end. Plug the DB-9 male connector end of the cable onto the XR500 Series panel J21 RS-232 connector. Plug the DB-9 female connector end of the cable onto the DB-9 male connector located at the back of the computer. Program the XR500 Series panel as needed then disconnect the computer.

16.3 Direct iCOM Connection to J21

Use DMP Model 397 cable with a DB-9 female connector on one end and an RJ connector on the other end. Mount the iCOM in the panel enclosure. Refer to the iCOM Installation Guide (LT-0587). Plug the 397 cable DB-9 male connector end onto the XR500 Series panel J21 RS-232 connector. Plug the RJ connector into the iCOM J1 Network connector. Program the XR500 Series panel as needed.

16.4 Serial Connector LEDs

The two LEDs, located near the bottom-right corner of J21 indicate data transmission and receipt. The top LED flashes green to indicate the panel is transmitting serial data. The bottom LED flashes yellow to indicate the panel is receiving serial data.

J1 Ethernet Connector (XR500N/XR500E only)

17.1 Description

The J1 Ethernet Connector is available on the XR500N/XR500E Network version to connect directly to an Ethernet network using a standard patch cable. The maximum impedance is 100 Ohms.

17.2 Ethernet LEDs

The two LEDs, located to the left of J1 Ethernet Connector, indicate network operation. The top, Link LED flashes green to indicate the network traffic is good. The bottom, Activity LED flashes yellow to indicate messages are being sent and received.

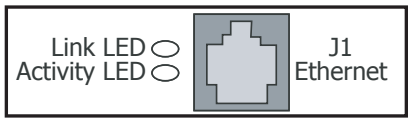


Figure 10: J1 Header and LEDs

J3 Telephone RJ Connector

18.1 Description

Connect the panel to the public telephone network by installing a DMP 356 RJ Cable between the panel J3 connector and the RJ31X or RJ38X phone block. The maximum impedance is 100 Ohms. **CAUTION -** To reduce the risk of fire, use only No. 26 AWG or larger telecommunication line cord, such as DMP Model 356 Series Phone Cords.

18.2 J10 893A Connector

Connect an 893A Dual Phone Line Module to J10 on the XR500 Series. Refer to the 893A Installation Sheet (LT-0135) for complete information.

18.3 Notification

The user must not repair registered terminal equipment. In case of trouble, immediately unplug the device from the telephone jack. The factory warranty provides for repairs. Registered terminal equipment may not be used on party lines or in connection with coin telephones. Notify the telephone company with the following information:

a. The particular line(s) where the service is connected

b. The FCC registration number as listed in Section 18.5

c. The ringer equivalence

d. The device make, model, and serial number

18.4 Phone Line Monitor

The XR500 Series panel has a built-in telephone monitor that monitors the phone line voltage to verify the connection to the central office. Figure 11 and the table below identify the phone block pin layout, wire numbers, and colors.

Wire Number	Wire Color
1	Gray
2	Orange
3	Black
4	Red
5	Green
6	Yellow
7	Blue
8	Brown

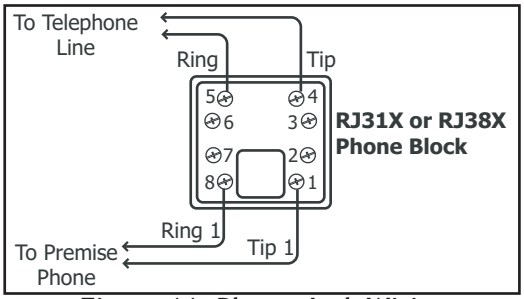


Figure 11: Phone Jack Wiring

The wires on the RJ31 that feed pins 4 and 5 should be the ONLY wires on the D-marc. All other house phone wiring should be tied to pins 1 and 8 coming back from the RJ31.

Dial tone must come into RJ31X on pins 4 and 5 and go back to house phones from pins 1 and 8. Follow these steps to determine if panel is seizing the line:

1. Unplug phone cord from RJ31X
2. Place butt-set on pins 4 and 5
3. Listen for dial tone. With dial tone present, lift either wire from pins 1 or 8
4. Listen for dial tone again. If the dial tone is present, RJ31X wiring is correct. If no dial tone is present, the RJ31X wiring is backwards. Rewire so dial tone is coming IN on 4 and 5.

If you still have trouble with the phone line, you may need to replace the RJ cord. If the dial tone is still not present, swap out the RJ31X phone block.

18.5 FCC Registration

The Model XR500 Series complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the outside of the enclosure of this equipment is a label that contains, among other information, a product identifier in the format US:CCKAL00BXR500. If requested this number must be provided to the telephone company.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. See installation instructions for details.

The Ringer Equivalence Number (REN) is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company.

If the XR500 Series causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If trouble is experienced with the Model XR500 Series, for repair or warranty information, please contact DMP at the address and telephone number listed on the back of this document. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

If your premises has specially wired alarm equipment connected to the telephone line, ensure the installation of the XR500 Series does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer.

Caution: To ensure proper operation, this equipment must be installed according to the installation instructions in this manual. To verify that the equipment is operating properly and can successfully report an alarm, this equipment must be tested immediately after installation, and periodically thereafter, according to the test instructions in this document and the XR500 Series Programming Guide (LT-0679). Additionally, verification of Line Seize capability should be made immediately after installation, and periodically thereafter, in order to ensure that this equipment can initiate a call even when other equipment (telephone, answering system, computer modem, etc.) connected to the same line is in use.

Reset and Tamper Headers

19.1 J16 Reset Header

The reset header is located just above the terminal strip on the right side of the circuit board and is used to reset the XR500 Series microprocessor. To reset the panel when first installing the system, install the reset jumper before applying power to the panel. After connecting the AC and battery, remove the reset jumper.

To reset the panel while the system is operational, for example, prior to reprogramming, install the reset jumper without powering down the system. Remove the reset jumper after one or two seconds.

After resetting the panel, begin programming within 30 minutes. If you wait longer than 30 minutes, you must reset the panel again.

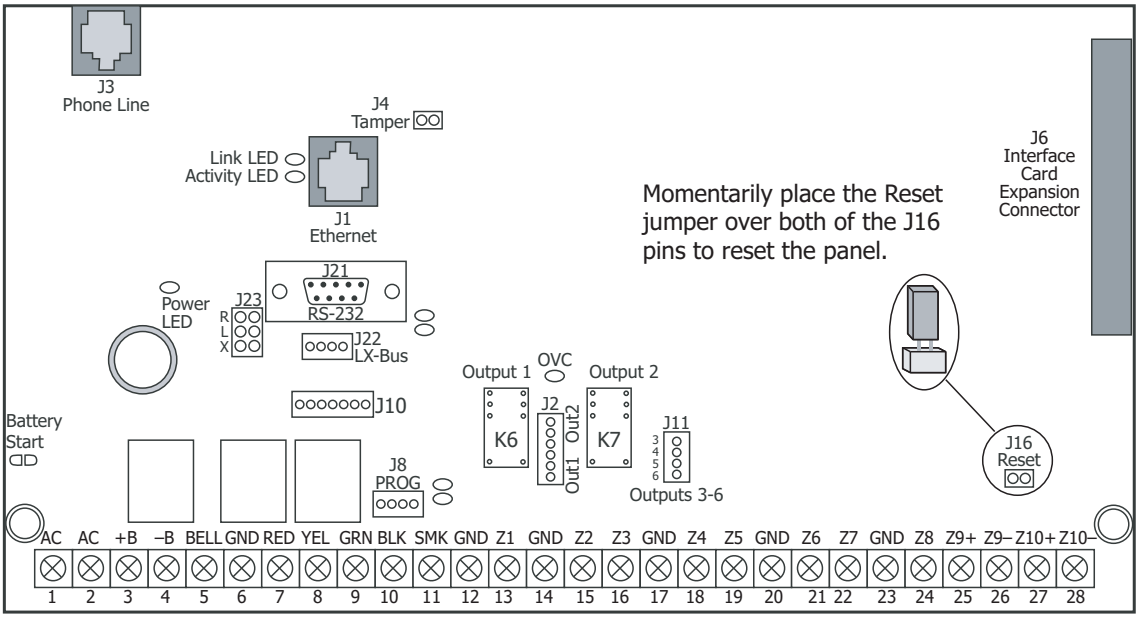


Figure 12: XR500 Series Panel Showing the Reset Jumper

19.2 J4 Tamper Header

The J4 header is for use with the optional DMP 306 Tamper Harness. The harness connects to one or more tamper switches mounted inside the panel enclosure to supervise against unauthorized enclosure opening or removal. Refer to the wiring diagram on the enclosure door for correct tamper switch wiring.

How the Tamper Works

If the enclosure is opened or removed while one or more of the system areas are armed, a panel tamper alarm is indicated. If all areas are disarmed, a panel tamper trouble is indicated.

Listed Compliance Specifications

20.1 Introduction

For applications that must conform to a local authorities installation standard or a National Recognized Testing Laboratory certificated system, please see the following sections.

Universal Burglary Specifications

21.1 Introduction

The programming and installation specifications contained in this section must be completed when installing the XR500 Series panel in accordance with any of the burglary standards. Additional specifications may be required by a particular standard. See the XR500 Series Programming Guide (LT-0679).

21.2 Wiring

All wiring must be in accordance with NEC, ANSI/NFPA 70, ANSI/UL 681, and ANSI/UL 827 for all burglary installations.

21.3 Control Outside of Protected Area

A Potter EVD or Sentrol 5402 should be used in place of a lined cabinet when the panel is installed outside of the protected area. Front and rear tamper switches are required. Refer to the system wiring diagram.

21.4 Police Station Phone Numbers

The digital dialer telephone number programmed for communication must not be a police station phone number.

21.5 Bypass Reports

The Bypass Reports option must be programmed as YES for all listed burglary applications.

21.6 System Maintenance

To ensure continuous satisfactory operation of any alarm system, proper installation and regular maintenance by the installing alarm company and frequent testing by the end user is essential. Offering a maintenance program and acquainting the user with the correct procedures for system use and testing is also the responsibility of the installing alarm company.

21.7 Listed Receivers

Operation has been verified with the DMP SCS-1R, Sur-Gard SG-HLR2-DG, FBII CP220PB, Osborne-Hoffman Quick-Alert, and Radionics D6500 receivers. It is the installer's responsibility to verify compatibility between the XR500 Series and the receiver used during installation. The installer shall verify the compatibility of the receiver and the system on a yearly basis.

21.8 Power Supply Supervision

For commercial burglary applications the power supply for all local bells shall be under 24-hour protection. Refer to the Secondary Power Supply section in this document.

21.9 Wireless Tamper

The Zone Information Disarmed Open Message to Transmit must be programmed Trouble (T). (Not applicable to ANSI/UL 1023).

21.10 Wireless External Contact

When used, the External Contact of 1101 or 1102 must be programmed Normally Closed.

21.11 Wireless Supervision Time

The Zone Information Supervision Time cannot be set to 0 (zero).

21.12 Detect Wireless Jamming

The Detect Wireless Jamming option must be programmed YES. (Not applicable to ANSI/UL 1023).

Area Information

22.1 Ownership
The control unit system shall be under one ownership.

22.2 Annunciation
The System shall be installed so that when arming any area from any keypad, the local bell shall annunciate.

22.3 Trouble Display
The Status List programming shall be set to annunciate all trouble messages at all keypads.

22.4 Closing Wait
The Closing Wait option must be programmed YES.

22.5 Local Bell Supervision
When a local bell is employed, the power supply for the bell shall be under 24-hour protection. Proper personnel for maintenance or security of the system shall be able to disarm that area.

Household Burglar-Alarm System Units ANSI/UL 1023

23.1 Audible Devices
At least one listed audible device (Ademco AB12M) rated to operate over the voltage rate of 11.7 VDC to 12.8 VDC and rated at 85 DB minimum must be used.

23.2 Auxiliary Circuits
At least one burglary alarm initiating device shall be used on the system. If the voltage for the device is applied by the control unit the burglary alarm initiating device shall be rated to operate over the range of 11.5 VDC to 12.7 VDC.

23.3 Bell Cutoff
The Bell Cutoff time cannot be less than five minutes.

23.4 Entry Delay
The maximum entry delay used must not be more than 45 seconds.

23.5 Exit Delay
The maximum exit delay used must not be more than 60 seconds. .

23.6 Weekly Test
The product should be tested weekly.

23.7 Wireless Audible Annunciation Option
The Wireless Audible option must be selected as DAY for residential applications.

Central-Station and Proprietary Burglar-Alarm Units ANSI/UL 1610 AND ANSI/UL 1076

24.1 Opening/Closing Reports
The Opening/Closing Reports option must be programmed as YES. .

24.2 Closing Wait
The Closing Wait option must be programmed YES.

24.3 Entry Delay
The maximum entry delay used must not be more than 60 seconds when using Model 350A or 350H Attack Resistant Housing.

24.4 Exit Delay

The maximum exit delay used must not be more than 60 seconds.

24.5 Proprietary Dialer

The Model XR500 Series provides proprietary service when configured as a digital dialer.

24.6 DACT Central Station

DACT Central Station service can be provided under by adding an Ademco AB12M bell and bell housing and placing the Model XR500 Series panel into Model 350A or 350H Attack Resistant Housing.

24.7 Bell Cutoff

The Bell Cutoff time cannot be less than 15 minutes.

24.8 Standard or Encrypted Line Security

Standard Line Security is provided when configured as a Path 1 NET system using an XR500N panel or an XR500 panel with an iCOM™ Network Alarm Router (232). The NET Check-in time must be set to 06 minutes or RND When programmed for Standard Line Security, Exit Time Restart is disabled. When a dialer is required for 06 minute check-in time, an attack resistant enclosure (DMP Model 350A or 350H) is required. When the check-in time is set to a number less than 200 seconds, an attack resistant enclosure is not required.

To provide Encrypted Line security, install an XR500E panel or an XR500 panel with an iCOM-E™ Encrypted Network Alarm Router.

For Encrypted Line security operation, communication between the Premise and Supervising Station provides 128 bit encryption when using an XR500E panel or an XR500 panel with an iCOM-E Encrypted Network Alarm Router.

The XR500 Series Protected Premises Control Unit is suitable for Standard Line Security service when configured for NET communication with SCS-1R receiving system. This configuration is approved for the following:

AMCX - Central Station Alarm Units
APOU - Proprietary Alarm Units

24.9 Wireless Audible Annunciation Option

The Wireless Audible option must be selected as ANY for commercial applications.

24.10 Model 463G or CellCom, CELL Only, Standard or Encrypted Line Security

Standard or Encrypted Line Security is provided when programmed using CELL with no backup. XR500 cellular communication is used as primary with a 3 minute check-in when armed or disarmed.

Path 1 programming	
Comm Type: = CELL	Checkin: = 3 minute
Path Type: = Primary	Fail Time: = 3 minute
Encrypt: = NO or YES*	Test Rpt: = NO
Sub Code: = NO or YES	

*For Encrypted Line Security, program a Passphrase in Network Options.

24.11 Model 463G or CellCom, NET with CELL as Alternate Primary and Dialer Backup, Standard or Encrypted Line Security

Standard or Encrypted Line Security is provided using NET communication with CELL as an alternate primary and with digital dialer as a backup. XR500 network communication is used as primary with a 6 minute check-in when armed, and a random check-in over a 60 minute period when disarmed. CELL is the backup path and set to daily test. Should the NET primary path become disabled, CELL adapts the same check-in time programmed for the primary communication and becomes an alternate primary path. The dialer path is used as the backup if both NET and CELL fail to receive acknowledgement from the receiver.

This method of operation causes the CELL alternate primary to adapt to the 6 minute NET primary check-in rate when the NET primary is unavailable maintaining line supervision and precludes the need for a central station runner to respond to the NET primary failure.

Path 1 programming	**Path 2 programming**	**Path 3 programming**
Comm Type: = NET	Comm Type: = CELL	Comm Type: = DD
Path Type: = Primary	Path Type: = Backup (operates as alternate primary)	Path Type: = Backup (operates as second method)
Test Rpt: = NO	Test Rpt: = YES	Test Rpt: = YES
Checkin: = 6 minute, or RND (random)	Test Freq: = Daily	Test Freq: = Daily
Fail Time: = 6 minute, or RND (random)	Checkin: = ADAPT	Duplicate Alarms: = YES
Encrypt: = NO or YES*	Encrypt: = NO or YES*	
Sub Code: = YES	Sub Code: = Shared	

*For Encrypted Line Security, program a Passphrase in Network Options.

24.12 Model 463G or CellCom, NET with CELL as Backup and Adaptive Primary, Standard or Encrypted Line Security

Standard or Encrypted Line Security is provided when programmed using NET communication and CELL as backup and as needed adapts and takes over as primary. XR500 network communication is used as primary with a 6 minute check-in when armed, and a random check-in over a 60 minute period when disarmed. CELL is the backup path and set to daily test. Should the primary path become disabled, the CELL adapts to a special 3 minute check-in time and because of that check-in rate becomes the primary without the requirement of an additional backup. This method of operation causes the CELL backup to adapt to the 3 minute check-in rate when the NET primary is unavailable becoming a standalone primary without the need for a backup. This maintains line supervision and precludes the need for a central station runner to respond to the NET primary failure.

Path 1 programming	**Path 2 programming**
Comm Type: = NET	Comm Type: = CELL
Path Type: = Primary	Path Type: = Backup (operates as second method)
Test Rpt: = NO	Test Rpt: = YES
Checkin: = 6 minute, or RND (random)	Test Freq: = Daily
Fail Time: = 6 minute, or RND (random)	Checkin: = ADAPT3
Encrypt: = NO or YES*	Encrypt: = NO or YES*
Sub Code: = YES	Duplicate Alarms: = YES
	Sub Code: = Shared

*For Encrypted Line Security, program a Passphrase in Network Options.

Holdup Alarm Units
ANSI/UL 636

25.1 ANSI/UL 1610 Required
The programming and installation specifications contained in this section must be completed in addition to ANSI/UL 1610 Specifications when installing a Model 1142 with a Model XR500 Series panel.

25.2 1100X Wireless Receiver
The Model 1100X Wireless Receiver in conjunction with the Model 1142 Holdup Alarm Transmitter must be installed in the system.

25.3 Wireless Supervision Time
The Zone Information Supervision Time must be a maximum of 240 minutes.

25.4 LED Display
The LED Operation option display must be set to NO when using a Model 1142 Holdup Alarm Transmitter.

25.5 Jamming Detection
The Detect Wireless Jamming option must be set to YES.

25.6 Local Alarm
The Bell Action for a PN (Panic) type zone must be programmed as N (None).

25.7 Message to Transmit
The Armed Open and Armed Short messages for a PN (Panic) type zone must be programmed to A (Alarm).

25.8 Wireless Audible Annunciation Option
The Wireless Audible option must be selected as ANY for commercial applications.

Digital Burglar Alarm Communicator System Units
ANSI/UL 1635

26.1 System Trouble Display
The Status List Display must include at least one keypad that displays system monitor troubles.

26.2 Digital Dialer Telephone Number
Both programmed telephone numbers must begin with a P.

26.3 Test Time
The Test Time option must be programmed so that the XR500 Series sends a report once every 24 hours.

26.4 Closing Wait
The Closing Wait option must be programmed YES.

Police Station Connected and Local Burglar Alarm Units
ANSI/UL 365

27.1 System Trouble Display
The Status List Display must include at least one keypad that displays system monitor troubles.

27.2 Entry Delay
The maximum entry delay used must not be more than 60 seconds when using Model 350A or 350H Attack housing.

27.3 Exit Delay
The maximum exit delay used must not be more than 60 seconds.

27.4 Bell

A local audible signal appliance must be used such as Ademco AB12M bell and bell housing.

The alarm housing for a mercantile alarm system without a remote alarm transmission connection shall be mounted on the outside of the building, visible from a public street or highway. It shall be accessible for examination and repair. It shall also be located not more than four stories above the street level unless:

a) A second alarm sounding device and housing, intended for outside service, is mounted adjacent to the premises or area of the building in which the alarm system is installed or

b) A second alarm sounding device, intended for inside service, is mounted within the premises.

In either case, the outside alarm sounding device and housing may be mounted as high as the seventh floor.

27.5 Bell Cutoff

The Bell Cutoff time cannot be less than 15 minutes.

27.6 Automatic Bell Test

The Automatic Bell Test option must be programmed as YES.

27.7 Standard or Encrypted Line Security

Standard Line Security is provided when configured as a Path 1 NET system using an XR500N panel or an XR500 panel with an iCOM™ Network Alarm Router. The NET Check-in time must be set to 06 minutes or RND When programmed for Standard Line Security, Exit Time Restart is disabled. When a dialer is required for 06 minute check-in time, an attack resistant enclosure (DMP Model 350A) is required. When the check-in time is set to a number less than 200 seconds, an attack resistant enclosure is not required.

To provide Encrypted Line security, install an XR500E panel or an XR500 panel with an iCOM-E™ Encrypted Network Alarm Router.

For Encrypted Line security operation, communication between the Premise and Supervising Station provides 128 bit encryption when using an XR500E panel or an XR500 panel with an iCOM-E Encrypted Network Alarm Router.

27.8 Wireless Audible Annunciation Option

The Wireless Audible option must be selected as ANY for commercial applications.

27.9 Model 463G or CellCom, CELL Only, Standard or Encrypted Line Security

Standard or Encrypted Line Security is provided when programmed using CELL with no backup. XR500 cellular communication is used as primary with a 3 minute check-in when armed or disarmed.

Path 1 programming	
Comm Type: = CELL	Checkin: = 3 minute
Path Type: = Primary	Fail Time: = 3 minute
Encrypt: = NO or YES*	Test Rpt: = NO
Sub Code: = NO or YES	

*For Encrypted Line Security, program a Passphrase in Network Options.

27.10 Model 463G or CellCom, NET with CELL as Alternate Primary and Dialer Backup, Standard or Encrypted Line Security

Standard or Encrypted Line Security is provided using NET communication with CELL as an alternate primary and with digital dialer as a backup. XR500 network communication is used as primary with a 6 minute check-in when armed, and a random check-in over a 60 minute period when disarmed. CELL is the backup path and set to daily test. Should the NET primary path become disabled, CELL adapts the same check-in time programmed for the primary communication and becomes an alternate primary path. The dialer path is used as the backup if both NET and CELL fail to receive acknowledgement from the receiver.

This method of operation causes the CELL alternate primary to adapt to the 6 minute NET primary check-in rate when the NET primary is unavailable maintaining line supervision and precludes the need for a central station runner to respond to the NET primary failure.

Path 1 programming	**Path 2 programming**	**Path 3 programming**
Comm Type: = NET	Comm Type: = CELL	Comm Type: = DD
Path Type: = Primary	Path Type: = Backup (operates as alternate primary)	Path Type: = Backup (operates as second method)
Test Rpt: = NO	Test Rpt: = YES	Test Rpt: = YES
Checkin: = 6 minute, or RND (random)	Test Freq: = Daily	Test Freq: = Daily
Fail Time: = 6 minute, or RND (random)	Checkin: = ADAPT	Duplicate Alarms: = YES
Encrypt: = NO or YES*	Encrypt: = NO or YES*	
Sub Code: = YES	Sub Code: = Shared	

*For Encrypted Line Security, program a Passphrase in Network Options.

27.11 Model 463G or CellCom, NET with CELL as Backup and Adaptive Primary, Standard or Encrypted Line Security

Standard or Encrypted Line Security is provided when programmed using NET communication and CELL as backup and as needed adapts and takes over as primary. XR500 network communication is used as primary with a 6 minute check-in when armed, and a random check-in over a 60 minute period when disarmed. CELL is the backup path and set to daily test. Should the primary path become disabled, the CELL adapts to a special 3 minute check-in time and because of that check-in rate becomes the primary without the requirement of an additional backup. This method of operation causes the CELL backup to adapt to the 3 minute check-in rate when the NET primary is unavailable becoming a standalone primary without the need for a backup. This maintains line supervision and precludes the need for a central station runner to respond to the NET primary failure.

Path 1 programming	**Path 2 programming**
Comm Type: = NET	Comm Type: = CELL
Path Type: = Primary	Path Type: = Backup (operates as second method)
Test Rpt: = NO	Test Rpt: = YES
Checkin: = 6 minute, or RND (random)	Test Freq: = Daily
Fail Time: = 6 minute, or RND (random)	Checkin: = ADAPT3
Encrypt: = NO or YES*	Encrypt: = NO or YES*
Sub Code: = YES	Duplicate Alarms: = YES
	Sub Code: = Shared

*For Encrypted Line Security, program a Passphrase in Network Options.

Police Station Connected and Local Burglar Alarm Units ANSI/UL 609

28.1 Mercantile

For Mercantile and Police Station Connect operation the Model XR500 Series must be mounted in an Attack Resistant Housing, (DMP Model 350A or 350H).

28.2 Entry Delay

The maximum entry delay used must not be more than 60 seconds when using the Model 350A or 350H housing.

28.3 Exit Delay

The maximum exit delay used must not be more than 60 seconds.

28.4 Mercantile Safe and Vault

When the DMP Model 350A or 350H Attack housing is used, the XR500 Series provides operation as a mercantile safe and vault alarm. Bell Supervision and wiring must be in accordance with ANSI/UL 681. When the XR500 Series is mounted outside the safe or vault, tamper protection and the Sentrol Model 5402 or Potter EVD listed vibration detectors should be used.

28.5 Bell

A local audible signal appliance must be used such as Ademco AB12M bell and bell housing.

In a mercantile burglar alarm system, a mercantile alarm sounding device located within a building but outside the protected area, is acceptable, provided it is rated for outside service and alarm conditions are transmitted to:

a) The dispatch location of the law enforcement agency having jurisdiction over the protected property or

b) A central station or residential monitoring station complying with the Standard for Central Station Alarm Services, UL 827.

In a mercantile burglar alarm system, an alarm sounding device located within the area of greatest protection, or outside the area of greatest protection but within an area protected by an alarm system and that shares a common control unit with the system installed in the area of greatest protection, is acceptable provided it is rated for inside service and alarm conditions are transmitted to:

a) The dispatch location of the law enforcement agency having jurisdiction over the protected property or

b) A central station or residential monitoring station complying with the Standard for Central Station Alarm Services, UL 827.

An inside sounding device shall be mounted at least 10 feet (3.05 m) above the floor or at the surface of the ceiling. When there is fixed construction within the area that could provide access for an intruder, the alarm sounding device shall also be mounted at least 4 feet (1.2 m), as measured horizontally, away from the edges of the fixed construction or at least 10 feet (3.05 m) above it so as to minimize access by an intruder.

28.6 Bank Safe and Vault (XR500N/XR500E only)

The Bank Safe and Vault option must be programmed as YES. The 72 hour battery standby must be provided. A Rothenbuhler Model 5110 High Security Bell must be used.

28.7 Wireless Audible Annunciation Option

The Wireless Audible option must be selected as ANY for commercial applications.

Access Control System Units ANSI/UL 294

29.1 Panel Designation

The XR500 Series panels are designated stand alone units.

29.2 Tamper Protection

For listed Access Control installations, a tamper switch must be used.

29.3 Compatible Devices

The following devices are compatible with the XR500 Series panels.

Access Control	
733 Wiegand Interface Module	Proximity reader connector
734 Wiegand Interface Module	Proximity reader connector
OP-08CB Motion Detector	Infrared sensor
* PB-2 REX Button	Exit control push button
PP-6005B Proxpoint Plus® Reader	Proximity reader
MP-5365 Miniprox® Reader	Slimline proximity reader
PR-5455 ProxPro® II Reader	Long range reader with sounder
MX-5375 Maxi-Prox™ Reader	Long range reader compatible with 1351 Prox Pass
*** This device has not been investigated and shall not be used in listed installations.**	

Universal Fire Alarm Specifications

30.1 Introduction
The programming and installation specifications contained in this section must be completed when installing the Model XR500 Series in accordance with any of the ANSI/UL or NFPA fire standards. Additional specifications may be required by a particular standard. See the XR500 Series Programming Guide (LT-0679).

30.2 Wiring
All wiring must be in accordance with NEC, ANSI/NFPA 70.

30.3 Transformer
Use the Model 322 or 323 wire-in 16 VAC 56 VA transformer mounted within 20 feet of the panel and connected by conduit.

30.4 End-of-Line Resistor
The DMP Model 310 1k Ohm EOL resistor should be used on all 1k Ohm EOL fire zones.

30.5 System Trouble Display
The Status List Display must include at least one keypad that displays system monitor troubles.

30.6 Fire Display
The Status List Display must include at least one keypad that displays troubles and alarms on fire type zones.

30.7 Police Station Phone Number
The digital dialer telephone number programmed for communication must not be a police station phone number, unless that phone number is specifically provided for that purpose.

30.8 System Maintenance
To ensure continuous satisfactory operation of any alarm system, proper installation and regular maintenance by the installing alarm company and frequent testing by the end user is essential. Offering a maintenance program and acquainting the user with the correct procedures for system use and testing is also the responsibility of the installing alarm company.

30.9 Audible Alarm
Fire Type zones must be programmed to activate an audible alarm. The Bell Action for Fire Type zones must not be programmed as N (None).

30.10 Fire Zone Programming
If a retard delay is used on a waterflow zone, it cannot exceed 90 seconds and any retard delay in the waterflow initiating devices must be subtracted from the 90 seconds allowed. The retard delay should not be used on a zone with smoke detectors.

30.11 Class A Style D Zones
If required, the DMP 869 Dual Style D Initiating Module provides for connection of two Class A Style D zones to the Model XR500 Series. See the 869 Installation Guide (LT-0186) and this guide for wiring information.

30.12 Listed Receivers
Use the DMP SCS-1R (SDLC), Sur-Gard SG-HLR2-DG (CID), FBII CP220PB (CID), and Osborne-Hoffman Quick-Alert (CID) receivers.

Control Units for Fire-Protective Signaling Systems ANSI/UL 864, NFPA 72

31.1 Power Supply

For listed installations, the total current combined from Auxiliary and Bell Power cannot exceed:
1.2 Amps with a 56 VA transformer; .5 Amp Max for Auxiliary Power and .7 Amp Max for Bell

For listed installations, the 50 VA Plug-in transformer cannot be used.

The total combined current from Terminals 7, 11, 25, and 27 cannot exceed 1.2 Amps.

31.2 Zone Restoral Reports

The Restoral Reports option must be selected as YES or Disarm.

31.3 Power Fail Delay

The Power Fail Delay option must be selected as required by the service of the panel. For Central Station or Remote Station service: 1.

31.4 Sprinkler Supervisory

Any zone used for sprinkler supervisory must be programmed with "SPRINKLR XXX" as the zone name. The last three characters in the zone name may be assigned a number to identify the zone. The Model 893A Dual Phone Line Module must be used on all sprinkler supervisory systems.

31.5 DACT Systems

A DACT system may be configured as one of the following:

Path 1 Type DD Primary and Path 2 Type DD Backup
Path 1 Type DD Primary and Path 2 Type CELL Backup
Path 1 Type DD Primary and Path 2 Type NET Backup

Path 1 Type DD Primary and Path 2 Type DD Backup

Use two telephone lines and the Model 893A Dual Phone Line Module to provide two phone line connections to the system. Two different telephone numbers must be programmed for digital communication. Do not connect to ground start or party lines.

Path 1 Programming	Path 2 Programming
Comm Type = DD	Comm Type = DD
Path Type = Primary	Path Type = Backup
Test Rpt = Yes	Test Rpt = Yes
Test Freq = 1 Dy	Test Freq = 1 Dy
893A = Yes	

Path 1 Type DD Primary and Path 2 Type CELL Backup

When using a telephone line and a GSM cellular as backup,

Path 1 Programming	Path 2 Programming
Comm Type = DD	Comm Type = CELL
Path Type = Primary	Path Type = Backup
Test Rpt = Yes	Test Rpt = Yes
Test Freq = 1 Dy	Test Freq = 1 Dy
	Receiver IP Address
	First GPRS APN

Path 1 Type DD Primary and Path 2 Type NET Backup

When using a telephone line and a Network IP as backup,

Path 1 Programming	Path 2 Programming
Comm Type = DD	Comm Type = NET
Path Type = Primary	Path Type = Backup
Test Rpt = Yes	Test Rpt = Yes
Test Freq = 1 Dy	Test Freq = 1 Dy
	Receiver IP Address

31.6 Local Protective Signaling Systems

The DMP Model 865, 866, or 867 Notification Circuit Module must be used on the bell circuit for detection of shorts and grounds. Any burglary or other off premises communication must be done with the Model 893A Dual Phone Line Module. For local commercial fire installations, the 893A is required.

31.7 Remote Station Protective Signaling Systems

You must provide 60 hours of standby battery. See section 6.9 in this guide for standby battery calculations. Two Radionics Model D127 Reversing Relay Modules provide two reversing polarity telephone connections. See the D127 Installation Instruction sheet for wiring details. A DMP Model 893A is used to provide two line dialer communication.

31.8 Fire Protective Signaling Systems using Internet/Intranet/Cell Networks

An Other Transmission Technologies system as defined in UL 864 9th Edition, Section 40.7 may be configured as NET Primary using a hardwire IP network or CELL Primary using a Model 463G Digital Cellular Communicator with or without a backup path. The system may be configured as one of the following:

Path 1 Type NET or CELL Primary with no Backup

Path 1 Programming	
Comm Type = NET or CELL	Checkin Min = 3
Path Type = Primary	Failtime Min = 5
Test Rpt = No	Sub Code = Yes
Checkin = Yes	Send Comm Trbl = Yes

Path 1 Type NET Primary and Path 2 Type DD Backup

Path 1 Programming	Path 2 Programming
Comm Type = NET	Comm Type = DD
Path Type = Primary	Path Type = Backup
Test Rpt = Yes	Test Rpt = Yes
Test Freq = 1 Dy	Test Freq = 1 Dy
Send Comm Trbl = Yes	Send Comm Trbl = Yes
Comm Path Trbl = Yes (Status List Programming)	

Path 1 Type NET Primary and Path 2 Type CELL Backup

Path 1 Programming	Path 2 Programming
Comm Type = NET	Comm Type = CELL
Path Type = Primary	Path Type = Backup
Test Rpt = Yes	Test Rpt = Yes
Test Freq = 1 Dy	Test Freq = 1 Dy
Send Comm Trbl = Yes	Send Comm Trbl = Yes
Comm Path Trbl = Yes (Status List Programming)	

Path 1 Type CELL Primary and Path 2 Type NET Backup

Path 1 Programming	Path 2 Programming
Comm Type = CELL	Comm Type = NET
Path Type = Primary	Path Type = Backup
Test Rpt = Yes	Test Rpt = Yes
Test Freq = 1 Dy	Test Freq = 1 Dy
Send Comm Trbl = Yes	Send Comm Trbl = Yes
Comm Path Trbl = Yes (Status List Programming)	

31.9 Combination Systems

For combination fire and burglary systems, powered burglary devices (PIR, Glassbreak, etc.) must be powered from a separate listed power supply (DMP Model 505-12). This requirement is not needed for non-powered burglary devices (door contacts, etc.) which only connect to the zone input of zone expanders or keypads. Refer to Powered Burglary Devices later in this document.

For combination fire and burglary systems, burglary sounding devices such as sirens and bells must be energized using panel relays, 860 relays, or 716 relays. Programming the output to activate the relay must occur using the Burglary Bell Output option in Area Information or by the Alarm Action output option of Zone Information. The Burglary Bell Action option of the panel Bell Options must be programmed as None.

31.10 Remote Annunciators

At least one Model 630F Remote Annunciator must be used on the system. All fire alarms, fire troubles and supervisory alarms or troubles must be annunciated only on the 630F. All burglary alarms or troubles must only be annunciated on non-fire keypads. See Status List options of the XR500 Series Programming Guide (LT-0679).

31.11 Notification Appliances

The following table indicates the approved notification appliances that can be used with the XR500 Series system.

Wheelock Model No.	Description	Max No. of Appliances using 56 VA
MT-12/24	Multi-tone Horn	8
MB-G6-12	Bell, 6 inch	16
MB-G10-12	Bell, 10 inch	16
RSS-121575W-F	Strobe, 15/75 candela	5
RSSP-121575W-F	Strobe, w/retrofit plate	5
NS-121575W-F	Horn Strobe, 15/75 candela	5
SM-12/24-R	Sync Module, Single circuit	
DSM-12/24-R	Sync Module, Dual circuit	

31.12 Cross Zoning

When using cross zoning, there must be a minimum of two detectors installed in each protected space and the detector installation spacing must be 0.7 times the linear spacing in accordance with National Fire Alarm Code, NFPA 72.

31.13 Ground Fault

For supervised circuits, ground fault is detected at 0 (zero) Ohms.

31.14 Wireless Testing

When using the 1100X Wireless Receiver for Fire Protective Signaling, after all transmitters are in position, the WLS option of the panel's Walk Test must be operated and all transmitters programmed for Fire (FI) or Supervisory (SV) must show that their checkin message was received.

Household Fire Warning System Units ANSI/UL 985, NFPA 72

32.1 Bell Output Definition

The Model XR500 Series panel Bell Output must be programmed to operate steady on burglary alarms and pulsed or temporal on fire alarms.

32.2 Audible Devices

At least one listed audible device rated to operate over the voltage rate of 11.7 VDC to 12.8 VDC and rated at 85 DB minimum must be used.

32.3 Auxiliary Circuits

At least one fire alarm initiating device shall be used on the system. If the voltage for the device is applied by the control unit the fire alarm initiating device shall be rated to operate over the range of 11.5 VDC to 12.7 VDC.

32.4 Bell Cutoff
The Bell Cutoff time cannot be less than five minutes.

32.5 Detect Wireless Jamming
The Detect Wireless Jamming option must be programmed YES.

32.6 Wireless External Contact
When used, the External Contact of 1101 or 1102 must be programmed Normally Closed.

32.7 Wireless Supervision Time
The Zone Information Supervision Time must be 240 minutes.

32.8 Wireless Fire Verification
When used, the Model 1161 and 1162 wireless smoke detectors must not be programmed as Fire Verification (FV) zone type.

California State Fire Marshal Specifications

33.1 Bell Output Definition
The Model XR500 Series panel Bell Output must be programmed to operate steady on burglary alarms and pulsed, temporal, or California School Code on fire alarms.

New York City (MEA) Specifications

34.1 Introduction
The programming and installation specifications contained in this section must be completed when installing the XR500 Series panel for New York City (MEA) fire alarm installations that provide a digital dialer with network IP communication as backup. Fire alarm installations that use two digital dialer telephone lines do not need to comply with these specifications.

34.2 Digital Dialer and Network Communication
When used with a central office communicator or a transmitter, the installation and operation of the equipment and devices shall comply with 3RCNY 17-01. The installation shall employ the digital dialer as the primary communicator (using telephone line) with network IP communication as backup or secondary means of communication. It shall have the capability of transmitting separate and distinct signals to indicate manual pull station alarm, automatic detection alarm, sprinkler waterflow alarm, supervisory signal indications and trouble indications.

34.3 Wiring
All wiring must be in accordance with NEC, ANSI, and NFPA 70. All network cabling must be installed in accordance with NFPA 70 for communication circuits.

34.4 Communication Programming
For digital dialer communication with supervised network backup, program the following:

PRIMARY COMM TYPE = DD
FIRST PHONE NUMBER = Central Station Receiver Phone Number
BACKUP COMM TYPE = NET
RECEIVER
ALARMS = YES

34.5 Additional Requirements
Program and install the equipment to comply with NFPA basic fire requirements. Refer to the Universal Fire Alarm Specifications and ANSI/UL 864 NFPA 72 Specifications in this document.

False Alarm Reduction Programmable Options *

35.1 Shipping Defaults and Recommended Programming for ANSI/SIA CP-01-2000

SIA CP-01 FEATURE PARAGRAPH # AND DESCRIPTION	DMP XR500 PROGRAMMING GUIDE LT-0679 SECTION #	REQUIREMENT	RANGE	SHIPPING DEFAULT	RECOMMENDED PROGRAMMING*
4.2.2.1 Exit Time	15.2 Exit Delay	Required (Programmable)	45 sec. - 250 sec.	60 Seconds	60 Seconds
4.2.2.2 Progress Annunciation	15.2 Exit Delay	Allowed	Individual keypads may be disabled per zone	All keypads enabled	All keypads enabled
4.2.2.3 Exit Time Restart	15.2 Exit Delay	Required Option	For re-entry during exit time	Enabled	Enabled
4.2.2.5 Auto Stay Arm on Unvacated Premises	33.3 Occupied Premise - See XR500 Install Guide (LT-0681)	Required Option (except for remote arming)	Area 1 = Perimeter Area 2 = Interior	Enabled	Enabled for Residential Applications
4.2.4.4 Exit Time and Progress Annunciation/ Disable - for Remote Arm	Not Available on Remote Arming	Allowed Option	Progress Annunciation Always disabled for Remote Arming	Not Available	Remote Arming not allowed for CP-01 installations.
4.2.3.1 Entry Delay(s)	8.3 Entry Delay	Required (Programmable)	30 sec. – 240 Sec. **	30 Seconds	At least 30 Seconds **
4.2.5.1 Abort Window – for Non-Fire Zones	3.7 Transmit Delay	Required Option	Disable by zone or zone type	Enabled NT DY EX Zone	Enabled
4.2.5.1 Abort Window Time – for Non-Fire Zones	3.7 Transmit Delay	Required (Programmable	15 sec. - 45 sec. **	30 Seconds	At least 15 Seconds **
4.2.5.1.2 Abort Annunciation	3.7 Transmit Delay	Required Option	Annunciate that no alarm was transmitted (S45)	Yes	Yes
4.2.5.4.1 Cancel Annunciation	Always Enabled - Not Programmable	Required Option	Annunciate that a Cancel was transmitted (S49)	Always Enabled	Yes
4.2.6.1 & 4.2.6.2 Duress Feature	User Code + 1 = Ambush Code Not Available	Allowed Option	No 1 + derivative of another user code/no duplicates with other user codes	Code +1 Always Disabled	Not Programmable
4.3.1 Cross Zoning	16.22 Cross Zone	Required Option	Yes/No Zone Programming	No	Enabled using two or more programmed zones
4.3.1 Programmable Cross Zoning Time	8.4 Cross Zone Time	Allowed	4 sec. - 250 sec.	4 Seconds	Per walk path in protected premises
4.3.2 Swinger Shutdown	8.7 Swinger Bypass Trips	Required (Programmable)	For all non-fire zones, shut down at 1 or 2 trips	One (1) trip	One (1) trip
4.3.2 Swinger Shutdown Disable	16.16 Swinger Bypass	Allowed	For non-police response zones	Yes	Enabled (all zones)
4.3.3 Fire Alarm Verification	16.4 Zone Type	Required Option	FV Type Zone	No	Yes as required (unless sensors can self verify)
4.5 Call Waiting Cancel	3.19 Telephone Number	Required Option	Include *70P in Telephone Number	Disabled	Enabled if user has call waiting

* Programming at installation may be subordinate to other listed requirements for the intended application.
** For listed Installations, combined Entry Delay and Transmit Delay should not exceed 1 minute.

False Alarm Reduction Programmable Options (continued)

35.2 Call Waiting (ANSI/SIA CP-01-2000)

The Call Waiting default setting is disabled. To cancel the Call Waiting feature, program * (star) 7 0 P (pause), the standard telephone code prefix that cancels call waiting, into the telephone number string. Cancel Call Waiting for telephone lines that have Call Waiting operational on the telephone line. See the XR500 Series Programming Guide (LT-0679).

Caution: A call waiting cancel programmed on a non-call waiting telephone line, would prevent communication to the central station.

35.3 Occupied Premise (ANSI/SIA CP-01-2000)

When only two areas are used, and area one is named Perimeter, and area two is named Interior, and no exit type zone transition occurs during the exit delay because the premise continues to be occupied, the Interior area will automatically disarm at the end of the exit delay.

35.4 Entry Delay (ANSI/SIA CP-01-2000)

Only use Entry Delay 1. Do not use Entry Delay 2, 3, or 4. See the XR500 Series Programming Guide (LT-0679).

35.5 Minimum Installation Requirements (ANSI/SIA CP-01-2000)

SIA CP-01-2000 minimum system installation requirements include an XR500, a listed local Bell, and off premise DACT communication to an SCS-1R receiver plus one of the following compatible keypads.

630F Fire Command™ Center
690, 790, 639/793 Security Command™ keypads
7060, 7063, 7070, or 7073 Thinline™ keypads
7060A, 7063A, 7070A, or 7073A Aqualite™ keypads
7160, 7163, 7170, or 7173 Thinline™ keypads
7760 Clear Touch™ keypad

ULC S304 Specifications

Signal Receiving Center and Premise Burglar Alarm Control Units

36.1 Level V Communication

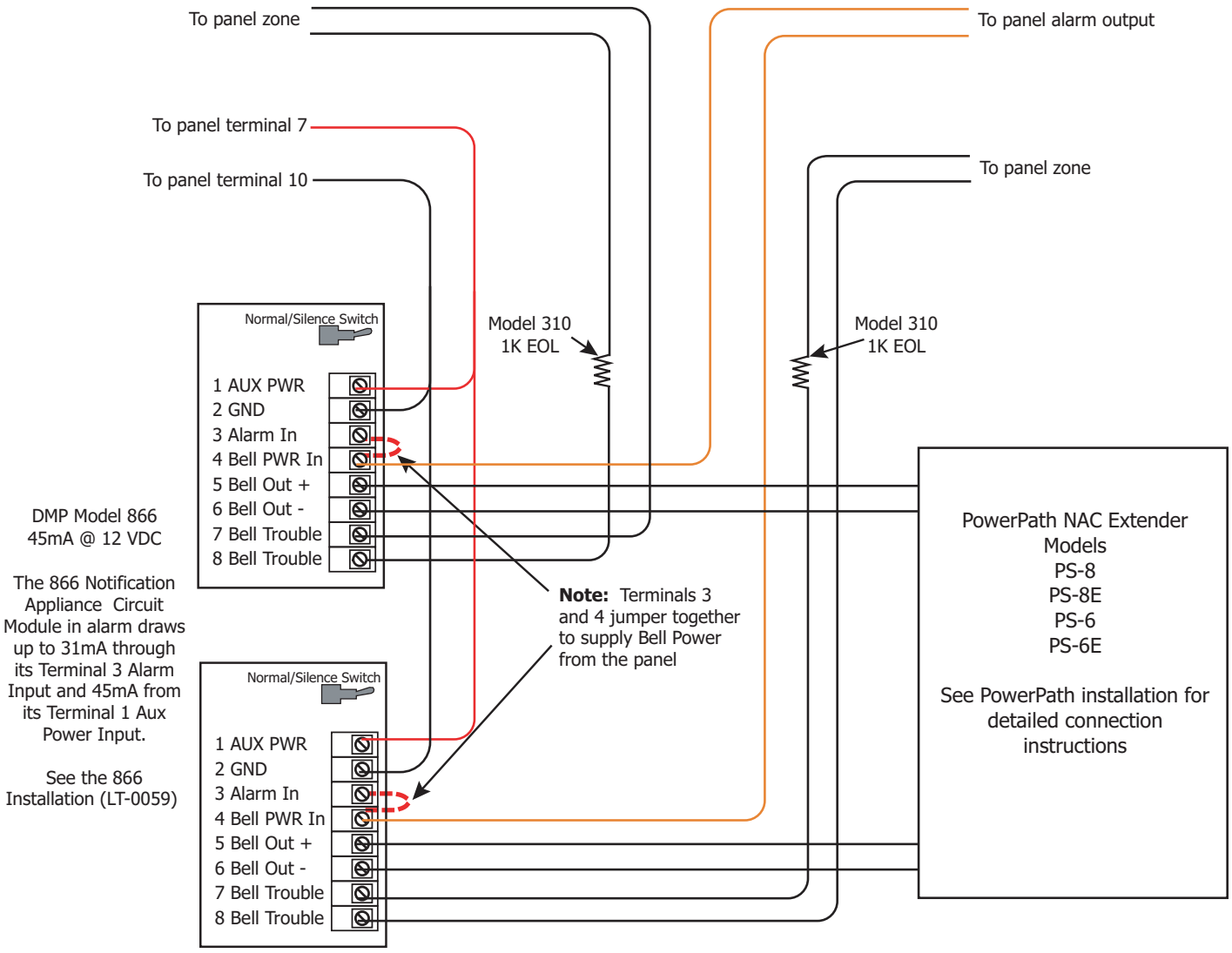
Level V communication channel security is provided for Internet, Intranet, LAN or WAN networks when configured as a NET communicating system using the XR500N. Additionally, the following options must be programmed in XR500 Series panel Communication:

SUB CODE:	YES
CHECKIN TIME:	2 MINUTES
FAIL TIME:	3 MINUTES
SEND COMM TRBL:	YES
TCP COMM:	YES

In addition, the SCS-101 Network Line Card installed in the SCS-1R Receiver must have the ACK Substitution Message programmed as NO.

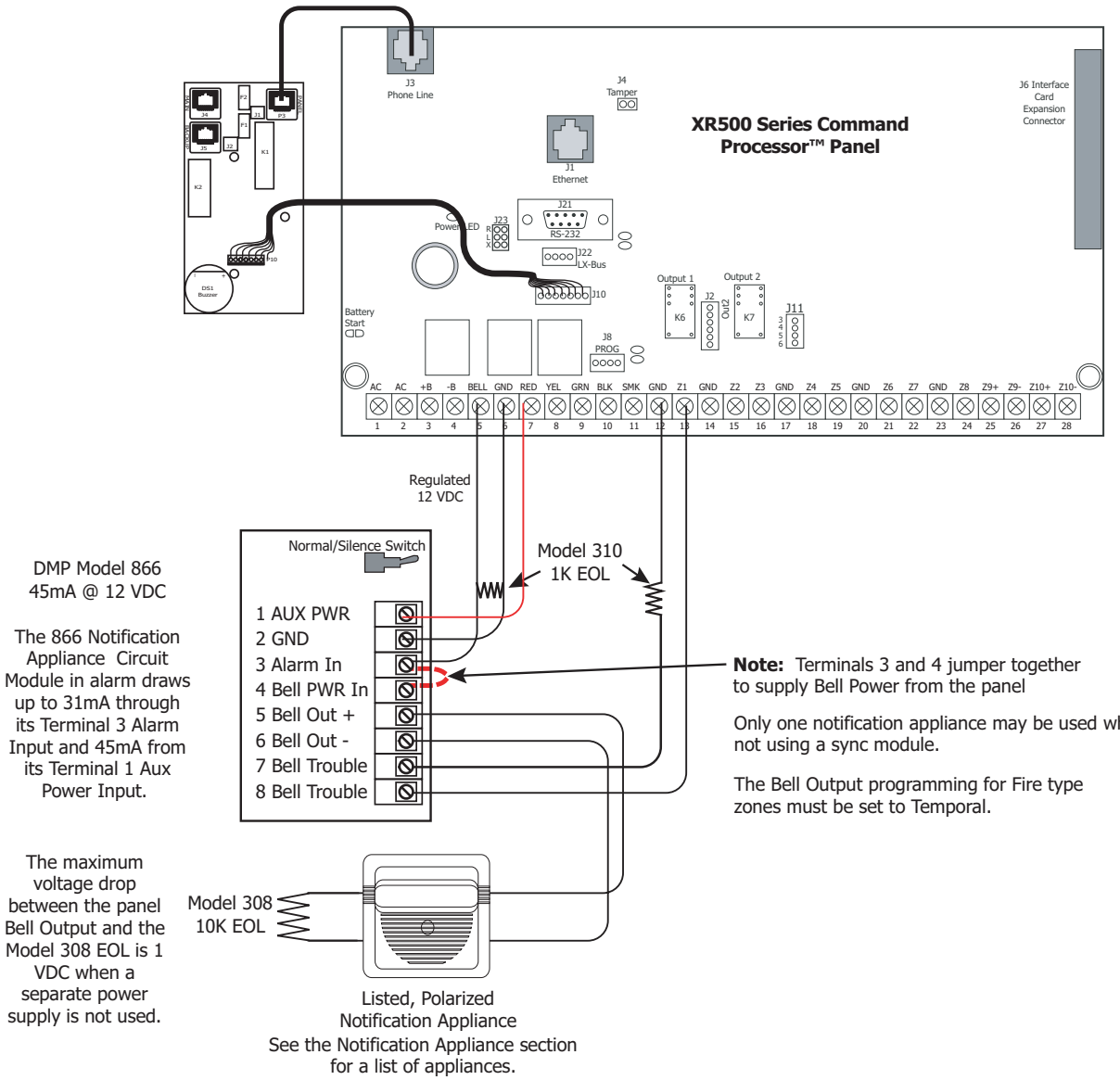
Wiring Diagrams

37.1 866 with NAC Extender


To panel zone
To panel terminal 7
To panel terminal 10
To panel alarm output
To panel zone
Normal/Silence Switch
1 AUX PWR
2 GND
3 Alarm In
4 Bell PWR In
5 Bell Out +
6 Bell Out -
7 Bell Trouble
8 Bell Trouble
Model 310
1K EOL
Model 310
1K EOL
DMP Model 866
45mA @ 12 VDC
The 866 Notification Appliance Circuit Module in alarm draws up to 31mA through its Terminal 3 Alarm Input and 45mA from its Terminal 1 Aux Power Input.
See the 866 Installation (LT-0059)
Note: Terminals 3 and 4 jumper together to supply Bell Power from the panel
PowerPath NAC Extender
Models
PS-8
PS-8E
PS-6
PS-6E
See PowerPath installation for detailed connection instructions

The Bell Output programming for Fire type zones must be set to Steady

37.2 866 Class B Style W using Single Notification Appliance



DMP Model 866
45mA @ 12 VDC

The 866 Notification Appliance Circuit Module in alarm draws up to 31mA through its Terminal 3 Alarm Input and 45mA from its Terminal 1 Aux Power Input.

Note: Terminals 3 and 4 jumper together to supply Bell Power from the panel

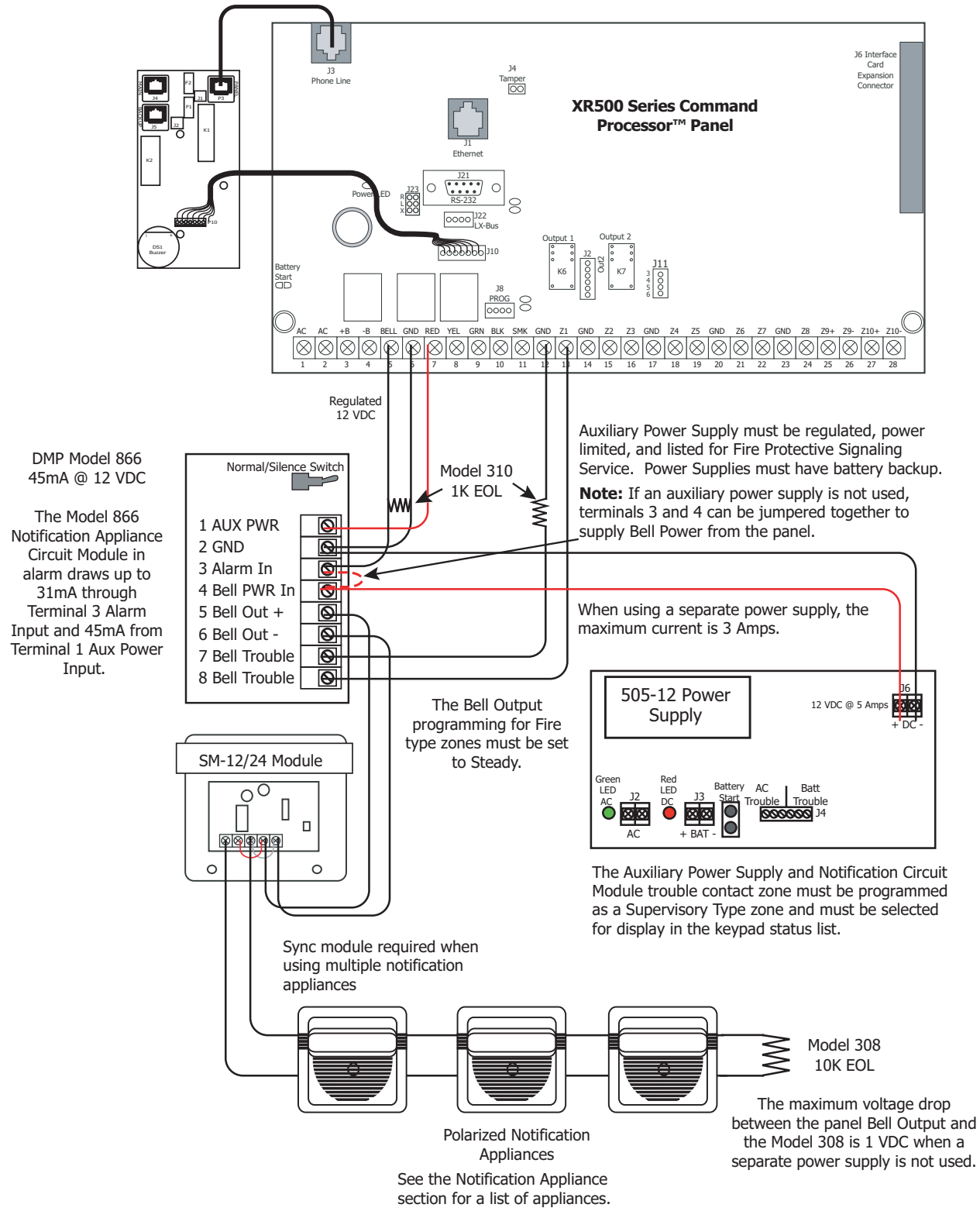
Only one notification appliance may be used when not using a sync module.

The Bell Output programming for Fire type zones must be set to Temporal.

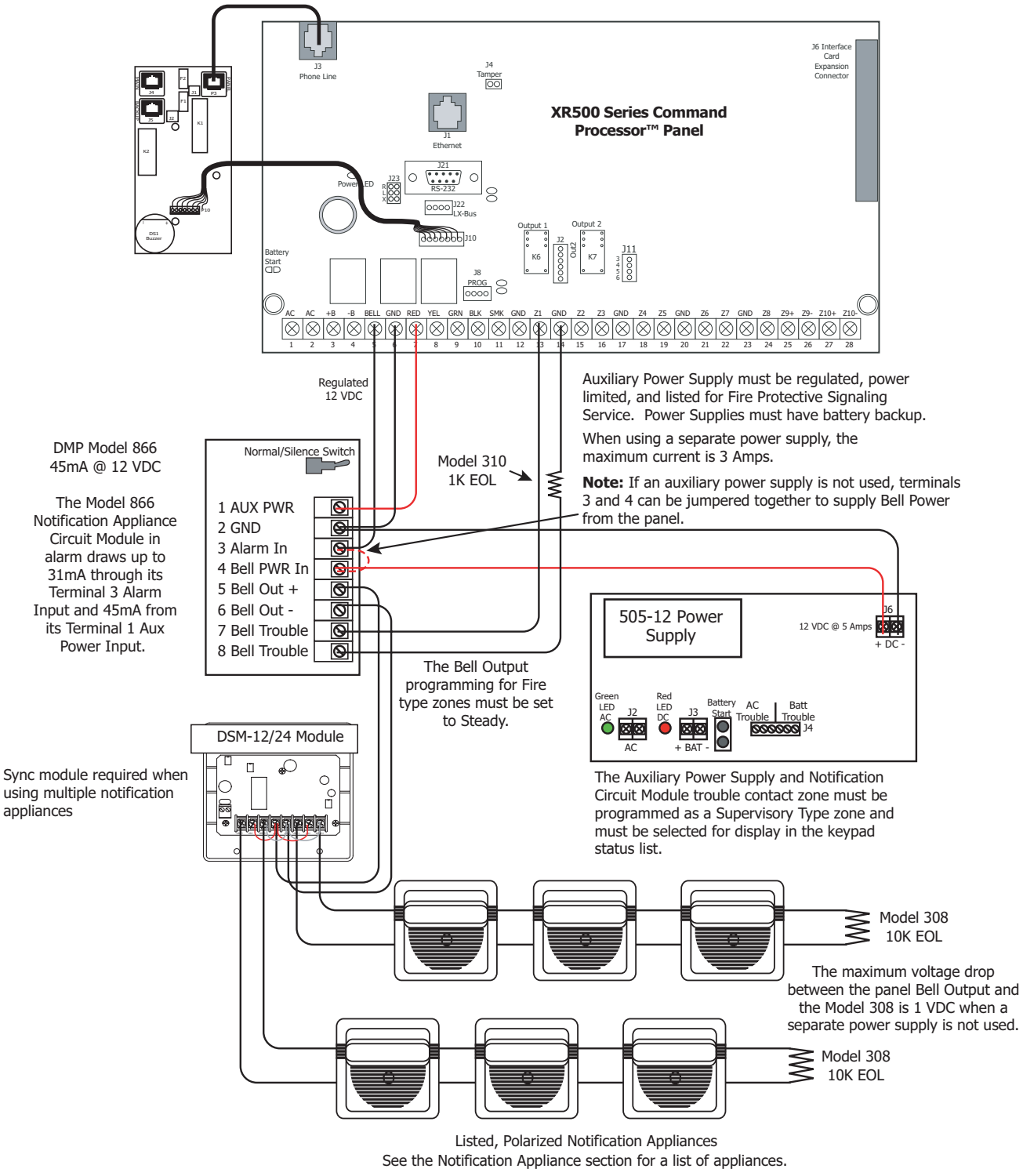
The maximum voltage drop between the panel Bell Output and the Model 308 EOL is 1 VDC when a separate power supply is not used.

Listed, Polarized
Notification Appliance
See the Notification Appliance section
for a list of appliances.

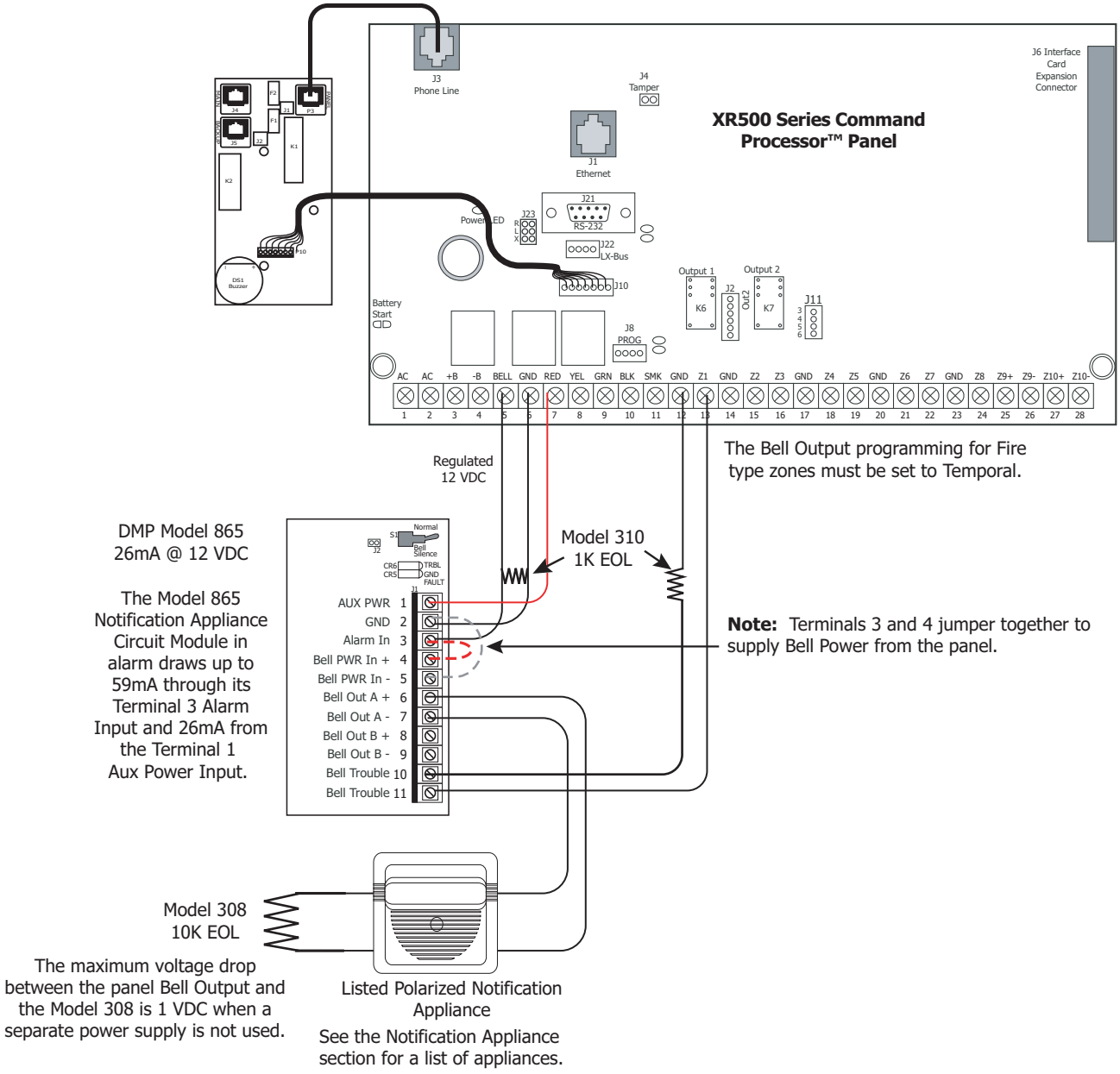
37.3 866 Class B Style W Multiple Notification Appliance Circuit


XR500 Series Command Processor™ Panel
J3 Phone Line
J4 Tamper
J1 Ethernet
J6 Interface Card Expansion Connector
J21 RS-232
J22 LX-Bus
J10
J23
Power LED
Output 1
Output 2
K6
K7
J2 Out2
J11
Battery Start
J8 PROG
AC AC +B -B BELL GND RED YEL GRN BLK SMK GND Z1 GND Z2 Z3 GND Z4 Z5 GND Z6 Z7 GND Z8 Z9+ Z9- Z10+ Z10-
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Regulated 12 VDC
DMP Model 866 45mA @ 12 VDC
The Model 866 Notification Appliance Circuit Module in alarm draws up to 31mA through Terminal 3 Alarm Input and 45mA from Terminal 1 Aux Power Input.
Normal/Silence Switch
1 AUX PWR
2 GND
3 Alarm In
4 Bell PWR In
5 Bell Out +
6 Bell Out -
7 Bell Trouble
8 Bell Trouble
Model 310 1K EOL
Auxiliary Power Supply must be regulated, power limited, and listed for Fire Protective Signaling Service. Power Supplies must have battery backup.
Note: If an auxiliary power supply is not used, terminals 3 and 4 can be jumpered together to supply Bell Power from the panel.
When using a separate power supply, the maximum current is 3 Amps.
505-12 Power Supply
12 VDC @ 5 Amps
J6
+ DC -
Green LED AC
J2
AC
Red LED DC
J3
+ BAT -
Battery Start
AC Trouble
Batt Trouble
J4
The Bell Output programming for Fire type zones must be set to Steady.
SM-12/24 Module
The Auxiliary Power Supply and Notification Circuit Module trouble contact zone must be programmed as a Supervisory Type zone and must be selected for display in the keypad status list.
Sync module required when using multiple notification appliances
Model 308 10K EOL
The maximum voltage drop between the panel Bell Output and the Model 308 is 1 VDC when a separate power supply is not used.
Polarized Notification Appliances
See the Notification Appliance section for a list of appliances.

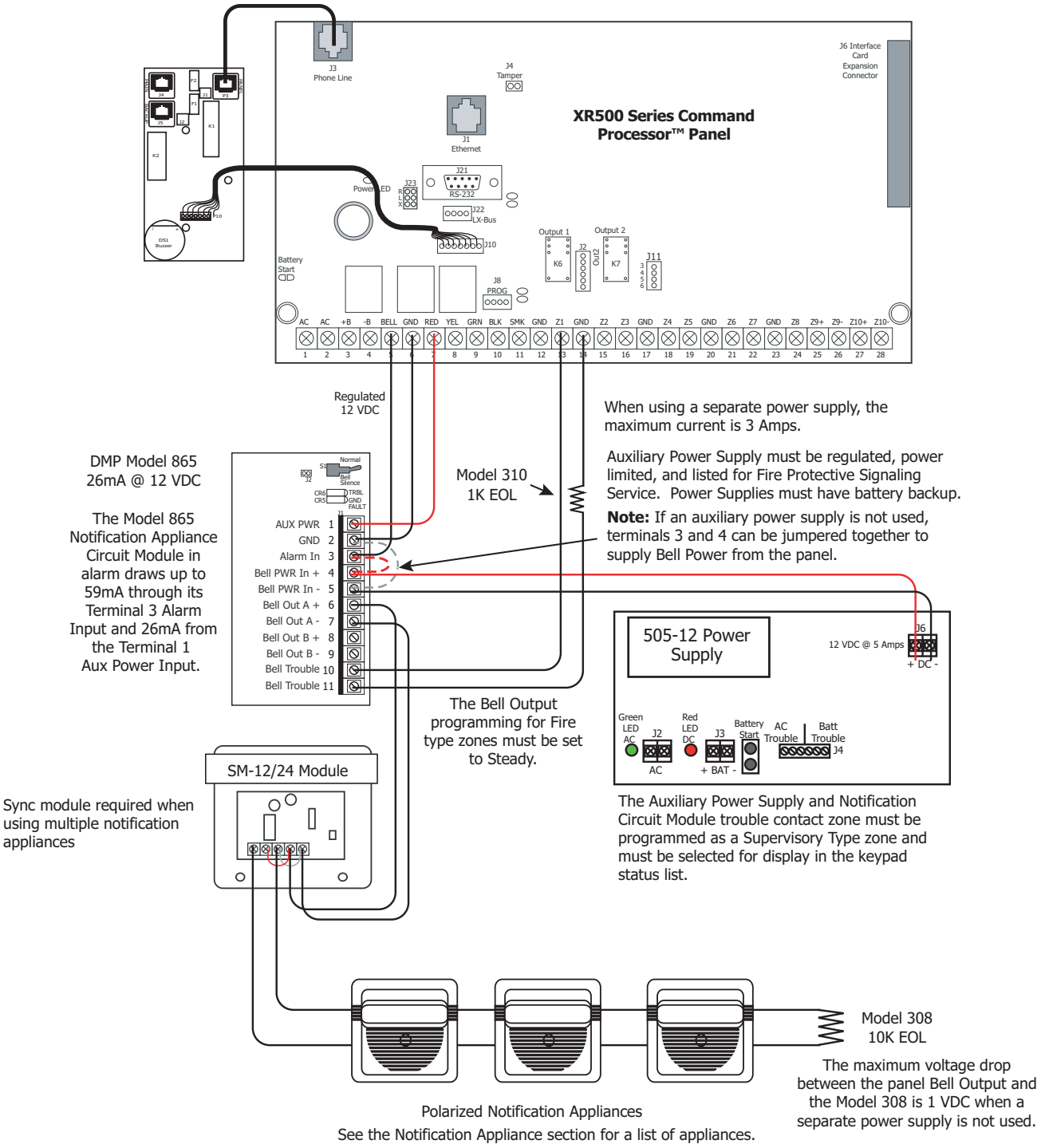
37.4 866 Class B Style W Dual Notification Appliance Circuits


XR500 Series Command Processor™ Panel
J3 Phone Line
J4 Tamper
J1 Ethernet
J6 Interface Card Expansion Connector
J21 RS-232
J22 X-Bus
J10
Power LED
Battery Start
J8 PROG
Output 1
Output 2
K6
K7
J2 Out2
J11
AC AC +B -B BELL GND RED YEL GRN BLK SMK GND Z1 GND Z2 Z3 GND Z4 Z5 GND Z6 Z7 GND Z8 Z9+ Z9- Z10+ Z10-
1 2 3 4 5 6 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Regulated 12 VDC
Auxiliary Power Supply must be regulated, power limited, and listed for Fire Protective Signaling Service. Power Supplies must have battery backup.
When using a separate power supply, the maximum current is 3 Amps.
Note: If an auxiliary power supply is not used, terminals 3 and 4 can be jumpered together to supply Bell Power from the panel.
DMP Model 866 45mA @ 12 VDC
The Model 866 Notification Appliance Circuit Module in alarm draws up to 31mA through its Terminal 3 Alarm Input and 45mA from its Terminal 1 Aux Power Input.
Normal/Silence Switch
1 AUX PWR
2 GND
3 Alarm In
4 Bell PWR In
5 Bell Out +
6 Bell Out -
7 Bell Trouble
8 Bell Trouble
Model 310 1K EOL
The Bell Output programming for Fire type zones must be set to Steady.
505-12 Power Supply
12 VDC @ 5 Amps
J6
+ DC -
Green LED AC
J2
AC
Red LED DC
J3
+ BAT -
Battery Start
AC Trouble
Batt Trouble
J4
The Auxiliary Power Supply and Notification Circuit Module trouble contact zone must be programmed as a Supervisory Type zone and must be selected for display in the keypad status list.
DSM-12/24 Module
Sync module required when using multiple notification appliances
Model 308 10K EOL
The maximum voltage drop between the panel Bell Output and the Model 308 is 1 VDC when a separate power supply is not used.
Model 308 10K EOL
Listed, Polarized Notification Appliances
See the Notification Appliance section for a list of appliances.

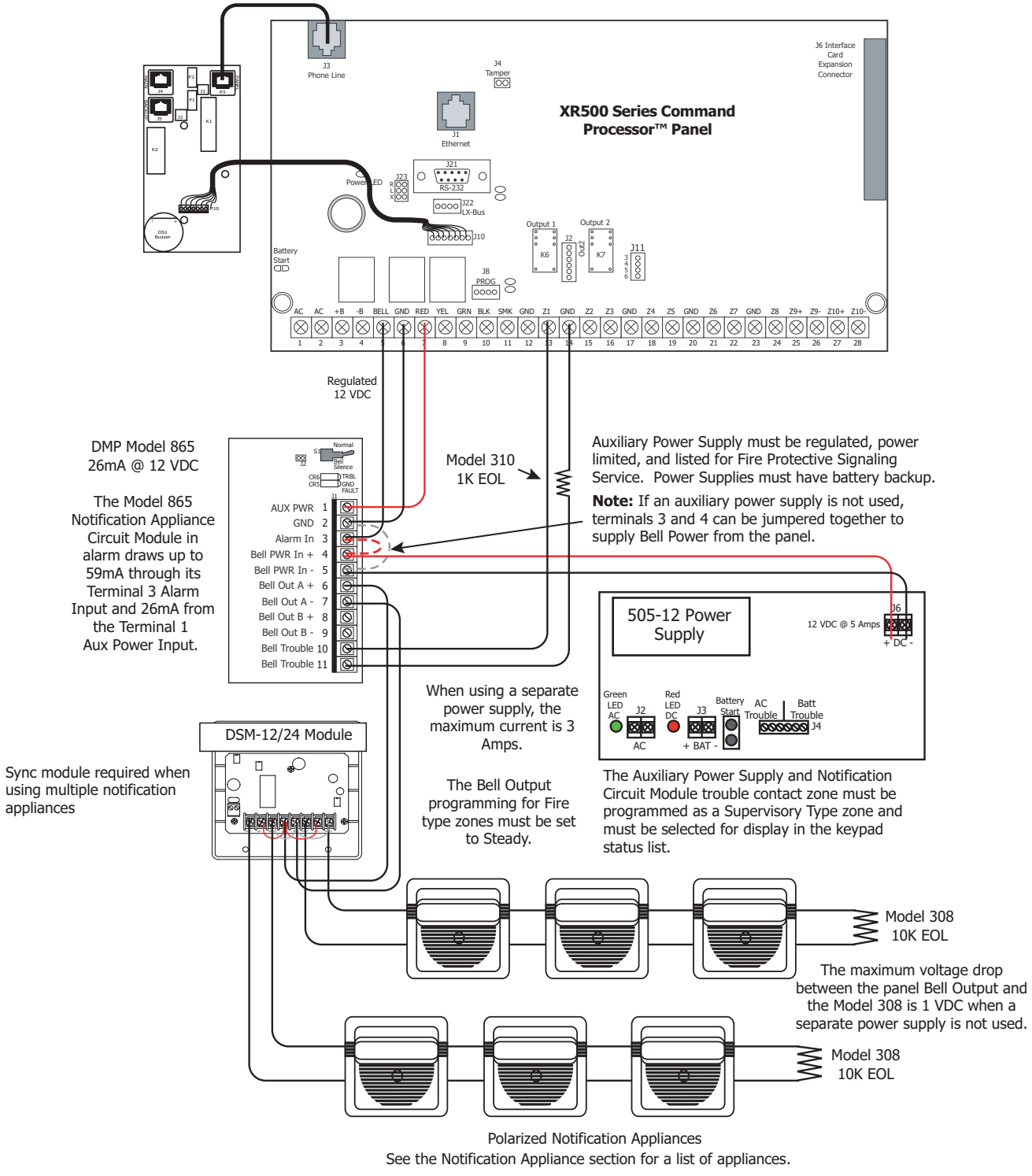
37.5 865 Class B Style W using Single Notification Appliance


XR500 Series Command Processor™ Panel
J3 Phone Line
J4 Tamper
J1 Ethernet
J6 Interface Card Expansion Connector
J21 RS-232
J22 LX-Bus
J23
J10
J8 PROG
J2 Out2
J11
Output 1
Output 2
K6
K7
Power LED
Battery Start
DS1 Buzzer
AC AC +B -B BELL GND RED YEL GRN BLK SMK GND Z1 GND Z2 Z3 GND Z4 Z5 GND Z6 Z7 GND Z8 Z9+ Z9- Z10+ Z10-
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Regulated 12 VDC
The Bell Output programming for Fire type zones must be set to Temporal.
DMP Model 865 26mA @ 12 VDC
The Model 865 Notification Appliance Circuit Module in alarm draws up to 59mA through its Terminal 3 Alarm Input and 26mA from the Terminal 1 Aux Power Input.
Normal
Bell Silence
TRBL
GND FAULT
AUX PWR 1
GND 2
Alarm In 3
Bell PWR In + 4
Bell PWR In - 5
Bell Out A + 6
Bell Out A - 7
Bell Out B + 8
Bell Out B - 9
Bell Trouble 10
Bell Trouble 11
Model 310 1K EOL
Note: Terminals 3 and 4 jumper together to supply Bell Power from the panel.
Model 308 10K EOL
The maximum voltage drop between the panel Bell Output and the Model 308 is 1 VDC when a separate power supply is not used.
Listed Polarized Notification Appliance
See the Notification Appliance section for a list of appliances.

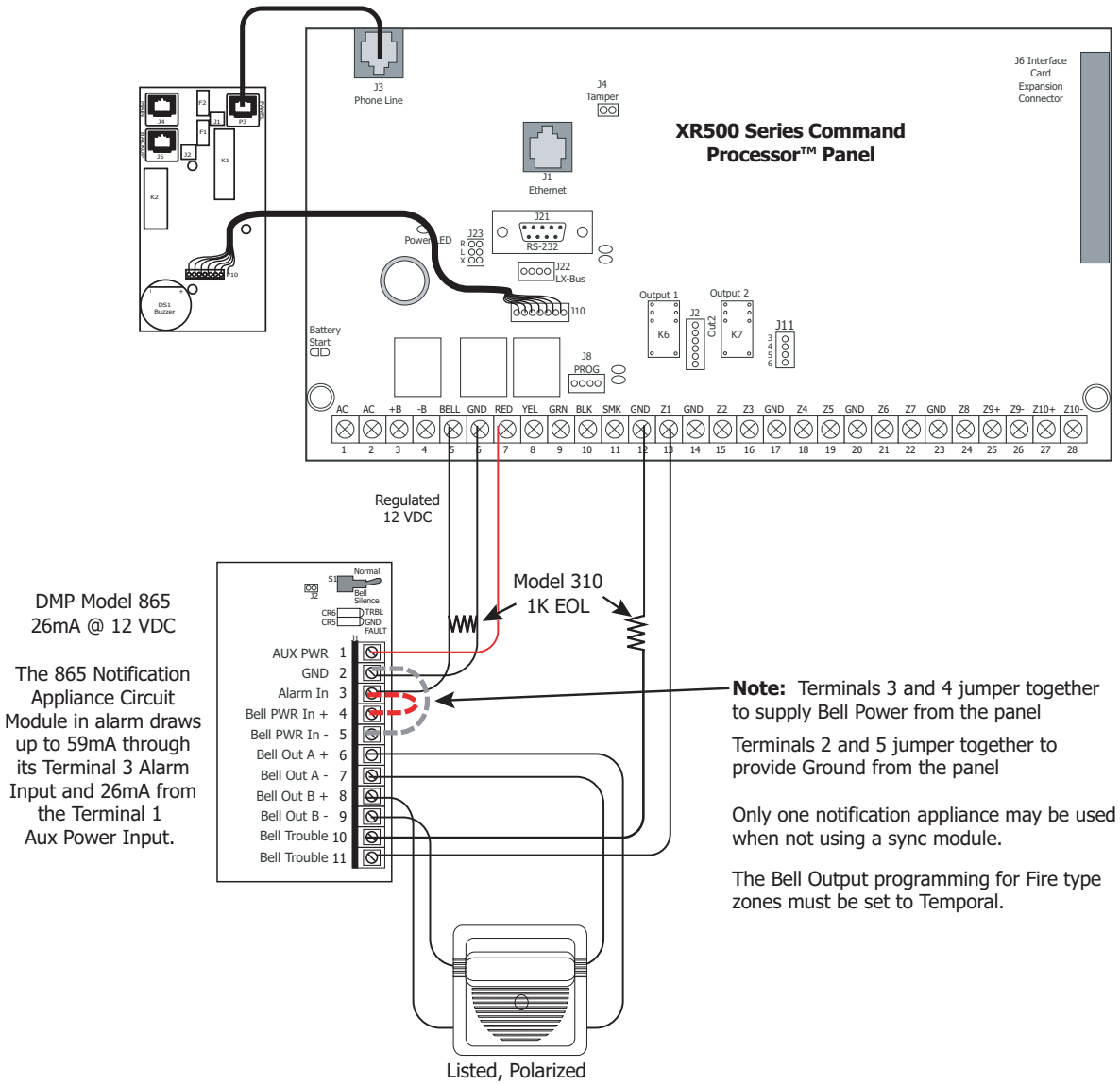
37.6 865 Class B Style W Multiple Notification Appliance Circuit


XR500 Series Command Processor™ Panel
J3 Phone Line
J4 Tamper
J1 Ethernet
J6 Interface Card Expansion Connector
J21 RS-232
J22 LX-Bus
J10
J8 PROG
Battery Start
Output 1
Output 2
K6
K7
J2
J11
AC AC +B -B BELL GND RED YEL GRN BLK SMK GND Z1 GND Z2 Z3 GND Z4 Z5 GND Z6 Z7 GND Z8 Z9+ Z9- Z10+ Z10-
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Regulated 12 VDC
When using a separate power supply, the maximum current is 3 Amps.
Auxiliary Power Supply must be regulated, power limited, and listed for Fire Protective Signaling Service. Power Supplies must have battery backup.
Note: If an auxiliary power supply is not used, terminals 3 and 4 can be jumpered together to supply Bell Power from the panel.
DMP Model 865 26mA @ 12 VDC
The Model 865 Notification Appliance Circuit Module in alarm draws up to 59mA through its Terminal 3 Alarm Input and 26mA from the Terminal 1 Aux Power Input.
Model 310 1K EOL
AUX PWR 1
GND 2
Alarm In 3
Bell PWR In + 4
Bell PWR In - 5
Bell Out A + 6
Bell Out A - 7
Bell Out B + 8
Bell Out B - 9
Bell Trouble 10
Bell Trouble 11
505-12 Power Supply
12 VDC @ 5 Amps
J6
+ DC -
Green LED AC
Red LED DC
J3
Battery Start
AC Trouble
Batt Trouble
J4
AC
+ BAT -
The Bell Output programming for Fire type zones must be set to Steady.
SM-12/24 Module
Sync module required when using multiple notification appliances
The Auxiliary Power Supply and Notification Circuit Module trouble contact zone must be programmed as a Supervisory Type zone and must be selected for display in the keypad status list.
Model 308 10K EOL
The maximum voltage drop between the panel Bell Output and the Model 308 is 1 VDC when a separate power supply is not used.
Polarized Notification Appliances
See the Notification Appliance section for a list of appliances.

37.7 865 Class B Style W Dual Notification Appliance Circuits


XR500 Series Command Processor™ Panel
J3 Phone Line
J4 Tamper
J1 Ethernet
J6 Interface Card Expansion Connector
J21 RS-232
J22 LX-Bus
J10
J8 PROG
Output 1
Output 2
K6
K7
J2
J11
Battery Start
AC AC +B -B BELL GND RED YEL GRN BLK SMK GND Z1 GND Z2 Z3 GND Z4 Z5 GND Z6 Z7 GND Z8 Z9+ Z9- Z10+ Z10-
Regulated 12 VDC
DMP Model 865
26mA @ 12 VDC
The Model 865 Notification Appliance Circuit Module in alarm draws up to 59mA through its Terminal 3 Alarm Input and 26mA from the Terminal 1 Aux Power Input.
AUX PWR 1
GND 2
Alarm In 3
Bell PWR In + 4
Bell PWR In - 5
Bell Out A + 6
Bell Out A - 7
Bell Out B + 8
Bell Out B - 9
Bell Trouble 10
Bell Trouble 11
Model 310
1K EOL
Auxiliary Power Supply must be regulated, power limited, and listed for Fire Protective Signaling Service. Power Supplies must have battery backup.
Note: If an auxiliary power supply is not used, terminals 3 and 4 can be jumpered together to supply Bell Power from the panel.
505-12 Power Supply
12 VDC @ 5 Amps
When using a separate power supply, the maximum current is 3 Amps.
The Bell Output programming for Fire type zones must be set to Steady.
The Auxiliary Power Supply and Notification Circuit Module trouble contact zone must be programmed as a Supervisory Type zone and must be selected for display in the keypad status list.
DSM-12/24 Module
Sync module required when using multiple notification appliances
Model 308
10K EOL
The maximum voltage drop between the panel Bell Output and the Model 308 is 1 VDC when a separate power supply is not used.
Model 308
10K EOL
Polarized Notification Appliances
See the Notification Appliance section for a list of appliances.

37.8 865 Class A Style X using Single Notification Appliance


XR500 Series Command Processor™ Panel
J3 Phone Line
J4 Tamper
J1 Ethernet
J6 Interface Card Expansion Connector
J21 RS-232
J22 LX-Bus
J10
J23
Power LED
Output 1
Output 2
K6
K7
J2
J11
J8 PROG
Battery Start
AC AC +B -B BELL GND RED YEL GRN BLK SMK GND Z1 GND Z2 Z3 GND Z4 Z5 GND Z6 Z7 GND Z8 Z9+ Z9- Z10+ Z10-
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Regulated 12 VDC
Model 310 1K EOL
Normal
Bell Silence
TRBL
GND FAULT
AUX PWR 1
GND 2
Alarm In 3
Bell PWR In + 4
Bell PWR In - 5
Bell Out A + 6
Bell Out A - 7
Bell Out B + 8
Bell Out B - 9
Bell Trouble 10
Bell Trouble 11

DMP Model 865
26mA @ 12 VDC

The 865 Notification Appliance Circuit Module in alarm draws up to 59mA through its Terminal 3 Alarm Input and 26mA from the Terminal 1 Aux Power Input.

Note: Terminals 3 and 4 jumper together to supply Bell Power from the panel

Terminals 2 and 5 jumper together to provide Ground from the panel

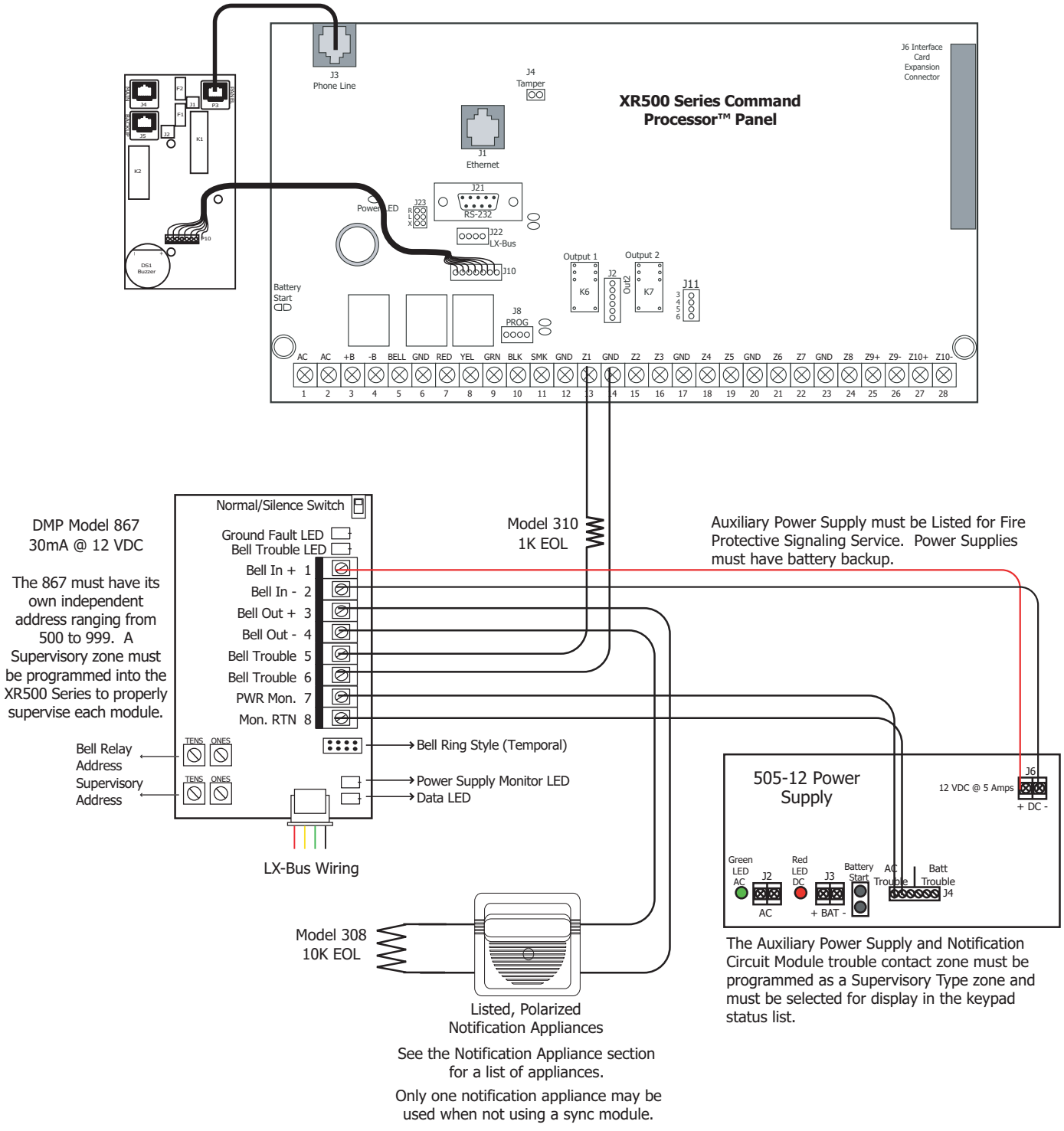
Only one notification appliance may be used when not using a sync module.

The Bell Output programming for Fire type zones must be set to Temporal.

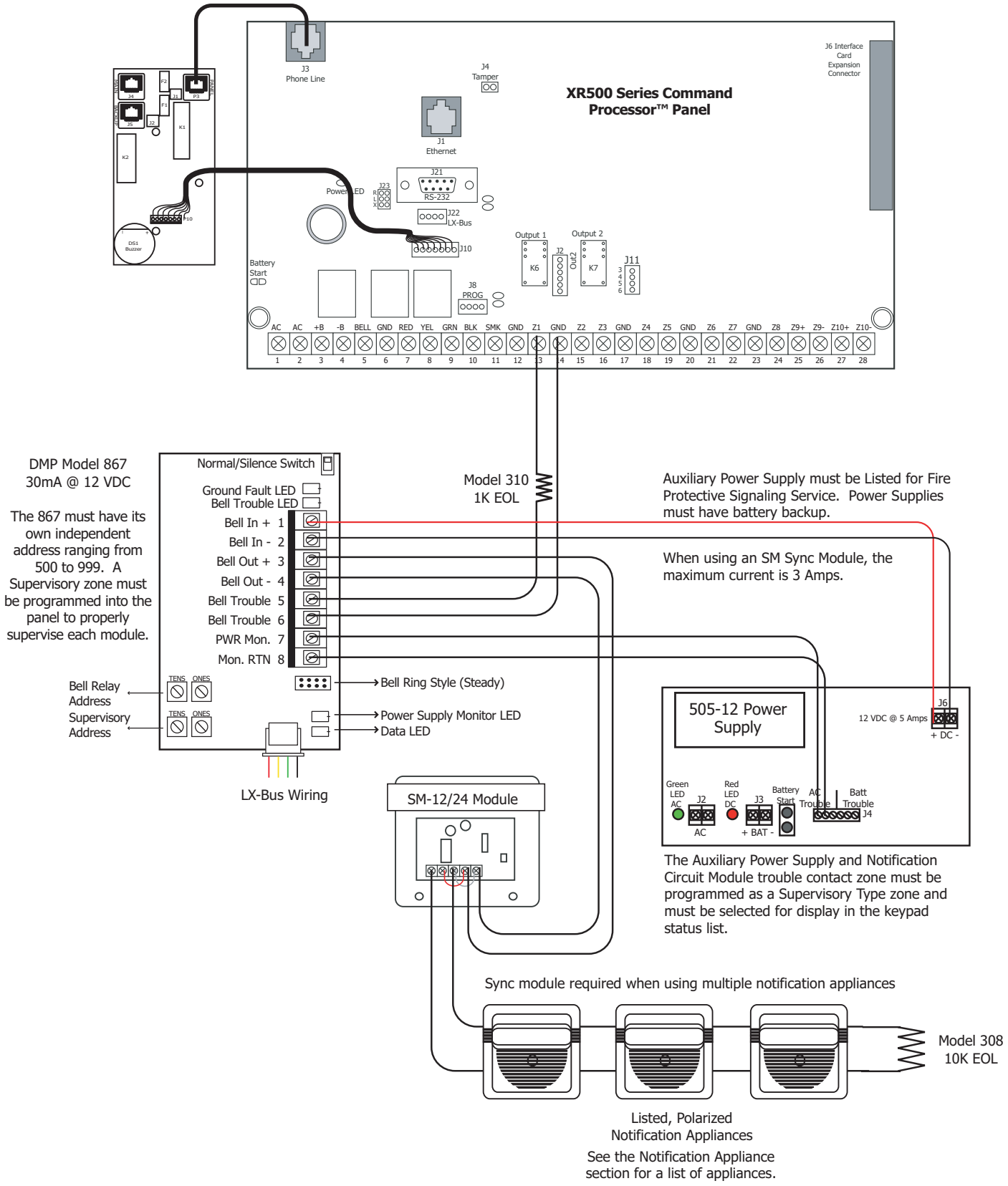
Listed, Polarized Notification Appliance

See the Notification Appliance section for a list of appliances.

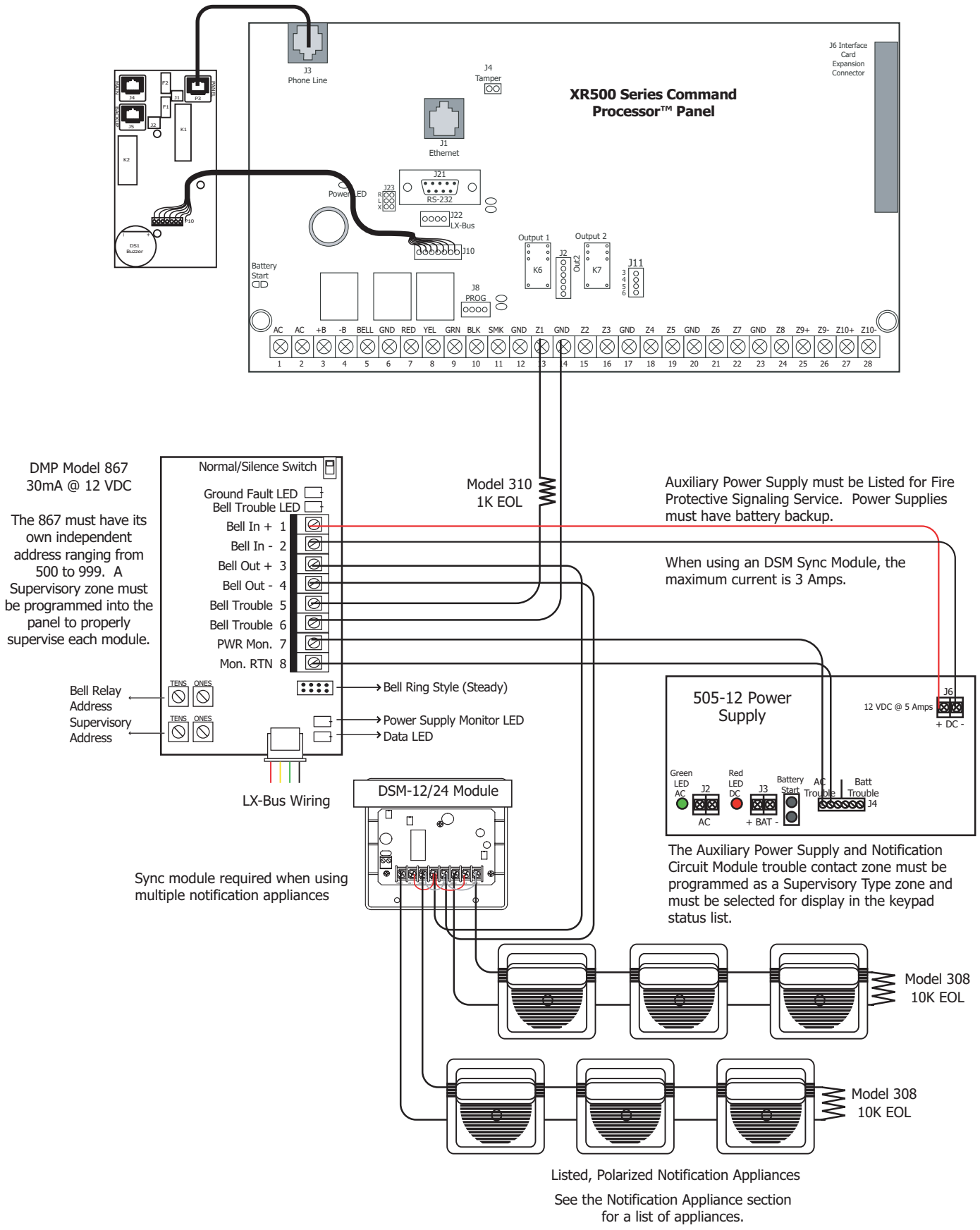
37.9 867 Class B Style W using Single Notification Appliance


XR500 Series Command Processor™ Panel
J3 Phone Line
J4 Tamper
J1 Ethernet
J6 Interface Card Expansion Connector
J21 RS-232
J22 LX-Bus
J10
Power LED
Battery Start
J8 PROG
Output 1
Output 2
K6
K7
J2
Out2
J11
AC AC +B -B BELL GND RED YEL GRN BLK SMK GND Z1 GND Z2 Z3 GND Z4 Z5 GND Z6 Z7 GND Z8 Z9+ Z9- Z10+ Z10-
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
DS1 Buzzer
P10
DMP Model 867
30mA @ 12 VDC
The 867 must have its own independent address ranging from 500 to 999. A Supervisory zone must be programmed into the XR500 Series to properly supervise each module.
Normal/Silence Switch
Ground Fault LED
Bell Trouble LED
Bell In + 1
Bell In - 2
Bell Out + 3
Bell Out - 4
Bell Trouble 5
Bell Trouble 6
PWR Mon. 7
Mon. RTN 8
TENS ONES
Bell Relay Address
Supervisory Address
Bell Ring Style (Temporal)
Power Supply Monitor LED
Data LED
LX-Bus Wiring
Model 310
1K EOL
Auxiliary Power Supply must be Listed for Fire Protective Signaling Service. Power Supplies must have battery backup.
505-12 Power Supply
12 VDC @ 5 Amps
J6
+ DC -
Green LED AC
J2
AC
Red LED DC
J3
+ BAT -
Battery Start
AC Trouble
Batt Trouble
J4
Model 308
10K EOL
Listed, Polarized Notification Appliances
See the Notification Appliance section for a list of appliances.
Only one notification appliance may be used when not using a sync module.
The Auxiliary Power Supply and Notification Circuit Module trouble contact zone must be programmed as a Supervisory Type zone and must be selected for display in the keypad status list.

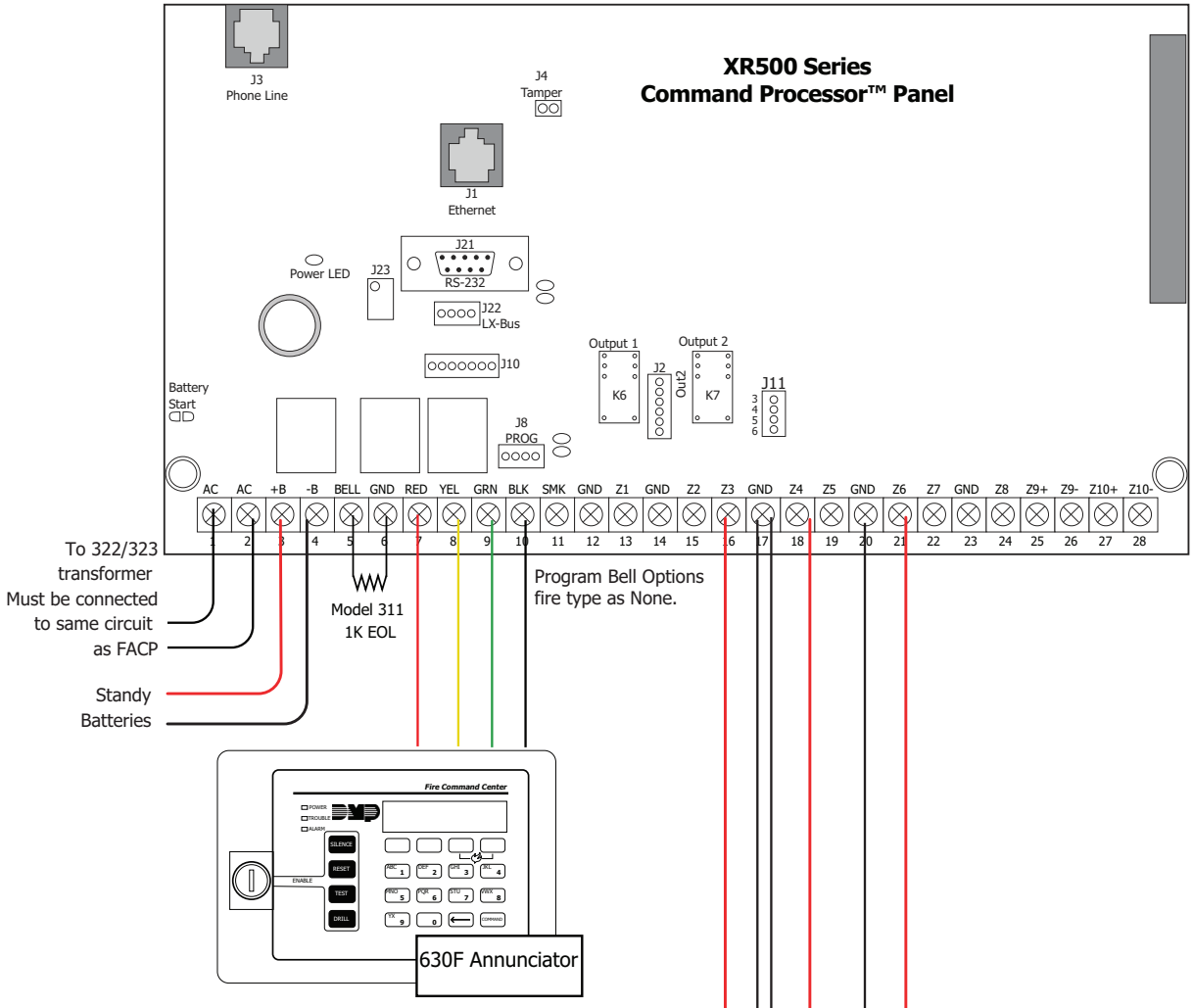
37.10 867 Class B Style W Multiple Notification Appliance Circuit


XR500 Series Command Processor™ Panel
J3 Phone Line
J4 Tamper
J1 Ethernet
J6 Interface Card Expansion Connector
J21 RS-232
J22 LX-Bus
J10
J8 PROG
J11
Output 1
Output 2
K6
K7
Battery Start
AC AC +B -B BELL GND RED YEL GRN BLK SMK GND Z1 GND Z2 Z3 GND Z4 Z5 GND Z6 Z7 GND Z8 Z9+ Z9- Z10+ Z10-
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
DMP Model 867
30mA @ 12 VDC
The 867 must have its own independent address ranging from 500 to 999. A Supervisory zone must be programmed into the panel to properly supervise each module.
Normal/Silence Switch
Ground Fault LED
Bell Trouble LED
Bell In + 1
Bell In - 2
Bell Out + 3
Bell Out - 4
Bell Trouble 5
Bell Trouble 6
PWR Mon. 7
Mon. RTN 8
TENS ONES
Bell Relay Address
Supervisory Address
Bell Ring Style (Steady)
Power Supply Monitor LED
Data LED
LX-Bus Wiring
Model 310
1K EOL
Auxiliary Power Supply must be Listed for Fire Protective Signaling Service. Power Supplies must have battery backup.
When using an SM Sync Module, the maximum current is 3 Amps.
505-12 Power Supply
12 VDC @ 5 Amps
J6
+ DC -
Green LED AC
Red LED DC
J2
J3
Battery Start
AC Trouble
Batt Trouble
J4
AC
+ BAT -
SM-12/24 Module
The Auxiliary Power Supply and Notification Circuit Module trouble contact zone must be programmed as a Supervisory Type zone and must be selected for display in the keypad status list.
Sync module required when using multiple notification appliances
Model 308
10K EOL
Listed, Polarized Notification Appliances
See the Notification Appliance section for a list of appliances.

37.11 867 Class B Style W Multiple Notification Appliance Circuits


XR500 Series Command Processor™ Panel
J3 Phone Line
J4 Tamper
J1 Ethernet
J6 Interface Card Expansion Connector
J21 RS-232
J22 LX-Bus
J10
Power LED
Output 1
Output 2
K6
K7
J2
J11
J8 PROG
Battery Start
AC AC +B -B BELL GND RED YEL GRN BLK SMK GND Z1 GND Z2 Z3 GND Z4 Z5 GND Z6 Z7 GND Z8 Z9+ Z9- Z10+ Z10-
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
DMP Model 867
30mA @ 12 VDC
The 867 must have its own independent address ranging from 500 to 999. A Supervisory zone must be programmed into the panel to properly supervise each module.
Normal/Silence Switch
Ground Fault LED
Bell Trouble LED
Bell In + 1
Bell In - 2
Bell Out + 3
Bell Out - 4
Bell Trouble 5
Bell Trouble 6
PWR Mon. 7
Mon. RTN 8
TENS ONES
Bell Relay Address
Supervisory Address
Bell Ring Style (Steady)
Power Supply Monitor LED
Data LED
LX-Bus Wiring
Model 310
1K EOL
Auxiliary Power Supply must be Listed for Fire Protective Signaling Service. Power Supplies must have battery backup.
When using an DSM Sync Module, the maximum current is 3 Amps.
505-12 Power Supply
12 VDC @ 5 Amps
J6
+ DC -
Green LED AC
Red LED DC
J2
J3
Battery Start
AC Trouble
Batt Trouble
J4
AC
+ BAT -
DSM-12/24 Module
Sync module required when using multiple notification appliances
The Auxiliary Power Supply and Notification Circuit Module trouble contact zone must be programmed as a Supervisory Type zone and must be selected for display in the keypad status list.
Model 308
10K EOL
Model 308
10K EOL
Listed, Polarized Notification Appliances
See the Notification Appliance section for a list of appliances.

37.12 Panel Slave Communicator for FACP using 630F Annunciator

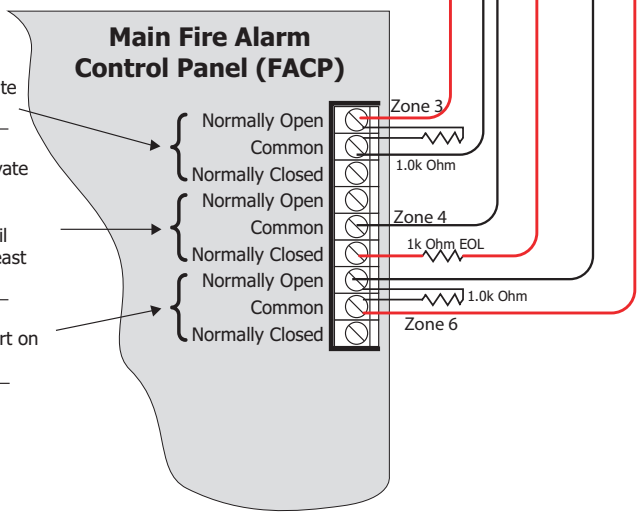


Program forFire Protective Signaling communication to the Central Station.

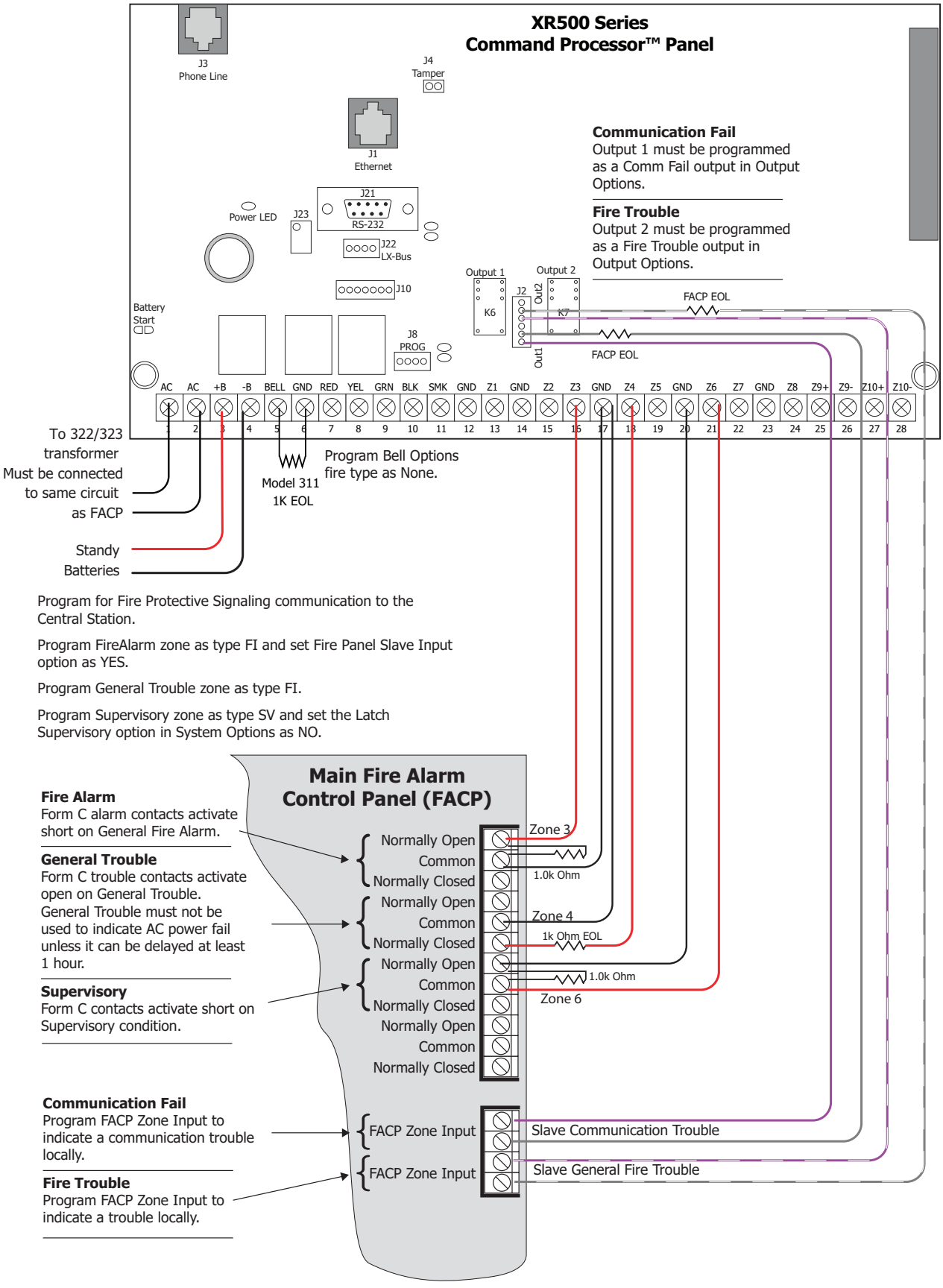
Program Fire Alarm zone as type FI and set Fire Panel Slave Input option as YES.

Program General Trouble zone as type FI.

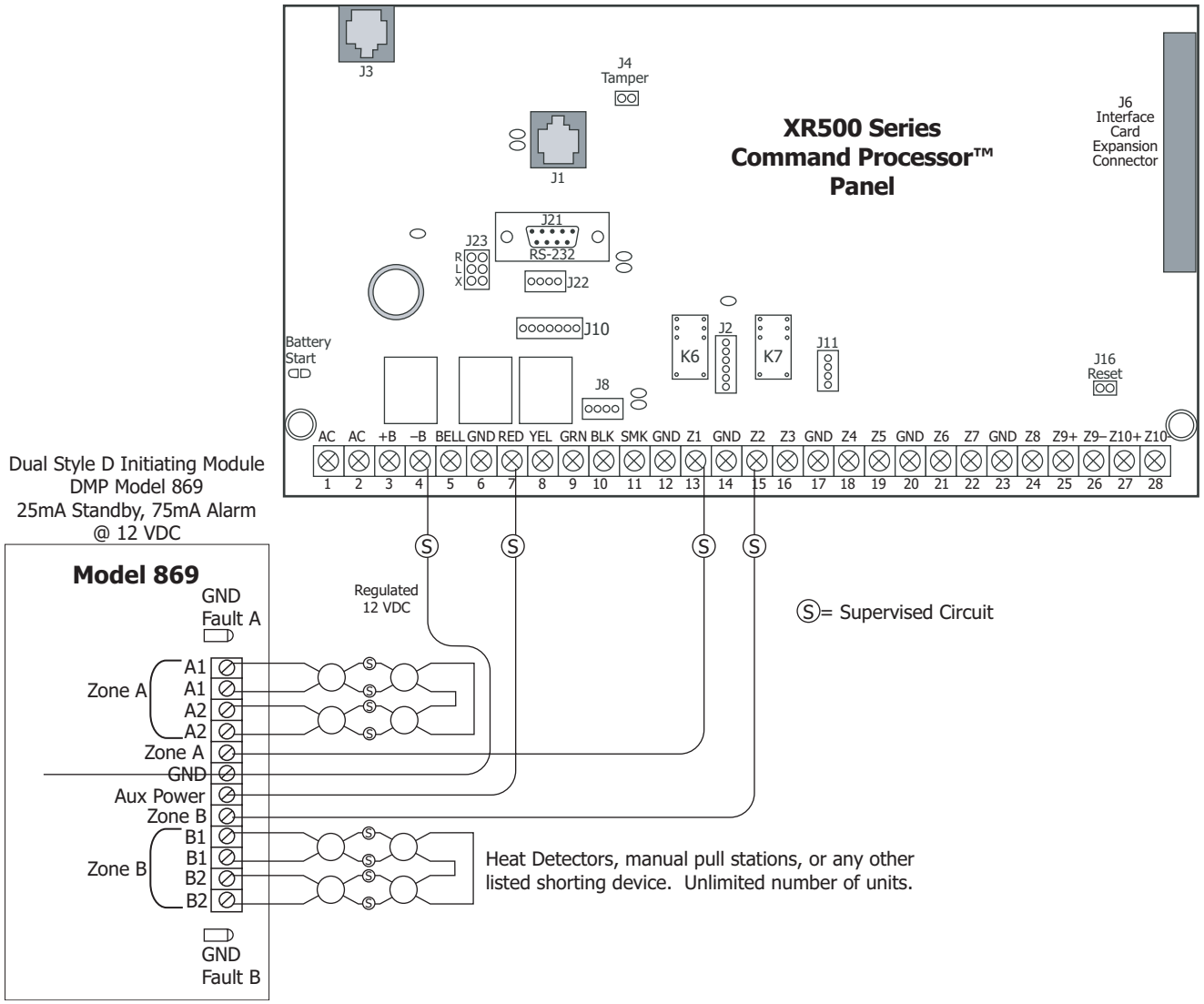
Program Supervisory zone as type SV and set the Latch Supervisory option in System Options as NO.


Main Fire Alarm
Control Panel (FACP)
Fire Alarm
Form C alarm contacts activate short on General Fire Alarm.
General Trouble
Form C trouble contacts activate open on General Trouble. General Trouble must not be used to indicate AC power fail unless it can be delayed at least 1 hour.
Supervisory
Form C contacts activate short on Supervisory condition.
Normally Open
Common
Normally Closed
Zone 3
1.0k Ohm
Zone 4
1k Ohm EOL
1.0k Ohm
Zone 6

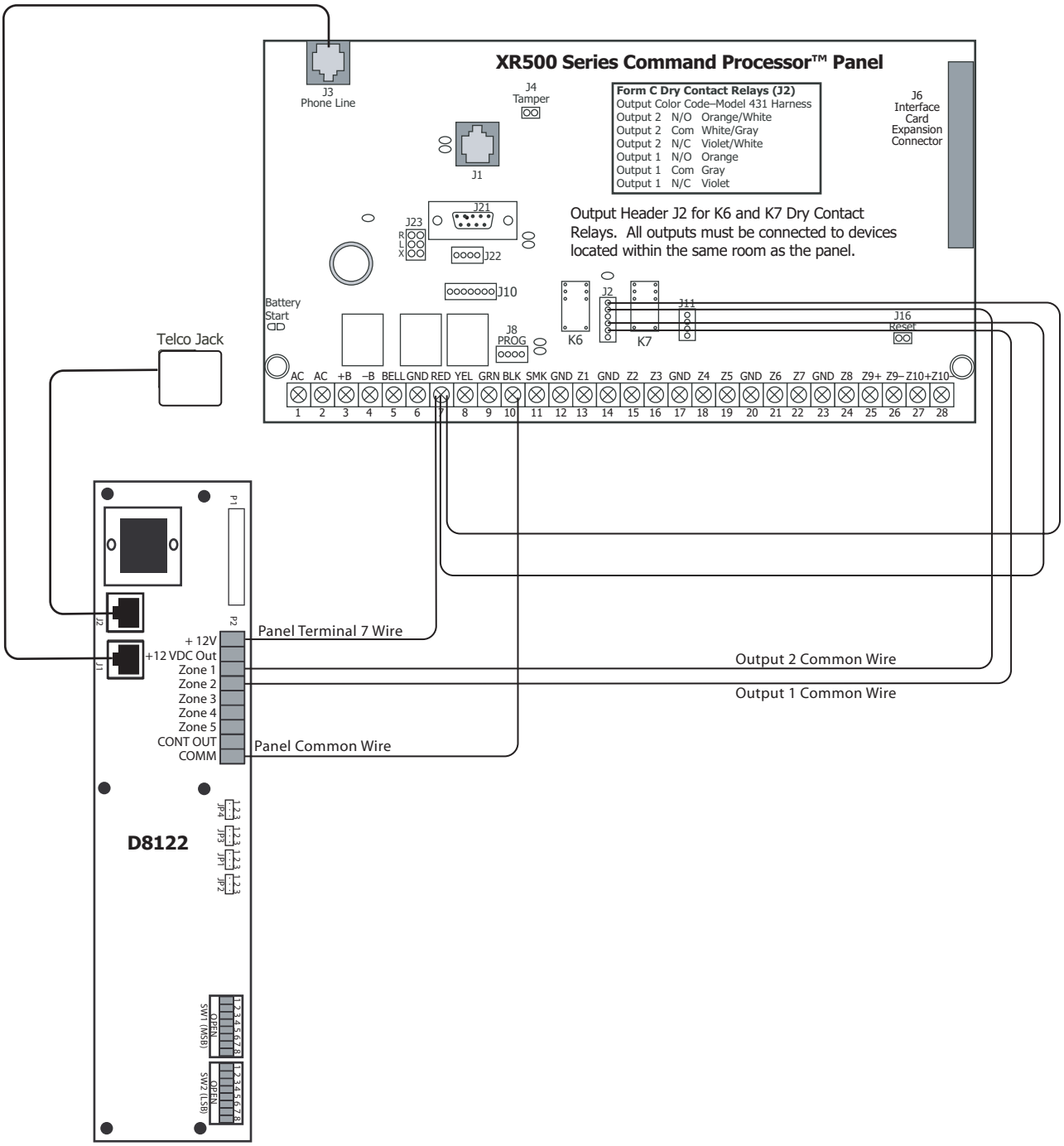
37.13 Panel Slave Communicator for FACP using Outputs


XR500 Series
Command Processor™ Panel
J3
Phone Line
J4
Tamper
J1
Ethernet
J21
RS-232
J23
Power LED
J22
LX-Bus
J10
J8
PROG
Battery
Start
Output 1
Output 2
K6
K7
J2
Out2
Out1
FACP EOL
FACP EOL
Communication Fail
Output 1 must be programmed as a Comm Fail output in Output Options.
Fire Trouble
Output 2 must be programmed as a Fire Trouble output in Output Options.
AC AC +B -B BELL GND RED YEL GRN BLK SMK GND Z1 GND Z2 Z3 GND Z4 Z5 GND Z6 Z7 GND Z8 Z9+ Z9- Z10+ Z10-
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
To 322/323 transformer Must be connected to same circuit as FACP
Standy Batteries
Model 311 1K EOL
Program Bell Options fire type as None.
Program for Fire Protective Signaling communication to the Central Station.
Program FireAlarm zone as type FI and set Fire Panel Slave Input option as YES.
Program General Trouble zone as type FI.
Program Supervisory zone as type SV and set the Latch Supervisory option in System Options as NO.
Main Fire Alarm
Control Panel (FACP)
Fire Alarm
Form C alarm contacts activate short on General Fire Alarm.
General Trouble
Form C trouble contacts activate open on General Trouble. General Trouble must not be used to indicate AC power fail unless it can be delayed at least 1 hour.
Supervisory
Form C contacts activate short on Supervisory condition.
Communication Fail
Program FACP Zone Input to indicate a communication trouble locally.
Fire Trouble
Program FACP Zone Input to indicate a trouble locally.
Normally Open
Common
Normally Closed
Zone 3
1.0k Ohm
Zone 4
1k Ohm EOL
1.0k Ohm
Zone 6
FACP Zone Input
FACP Zone Input
Slave Communication Trouble
Slave General Fire Trouble

37.14 Dual Style D Zone Module Installation



37.15 Derived Channel Installation Using Bosch D8122

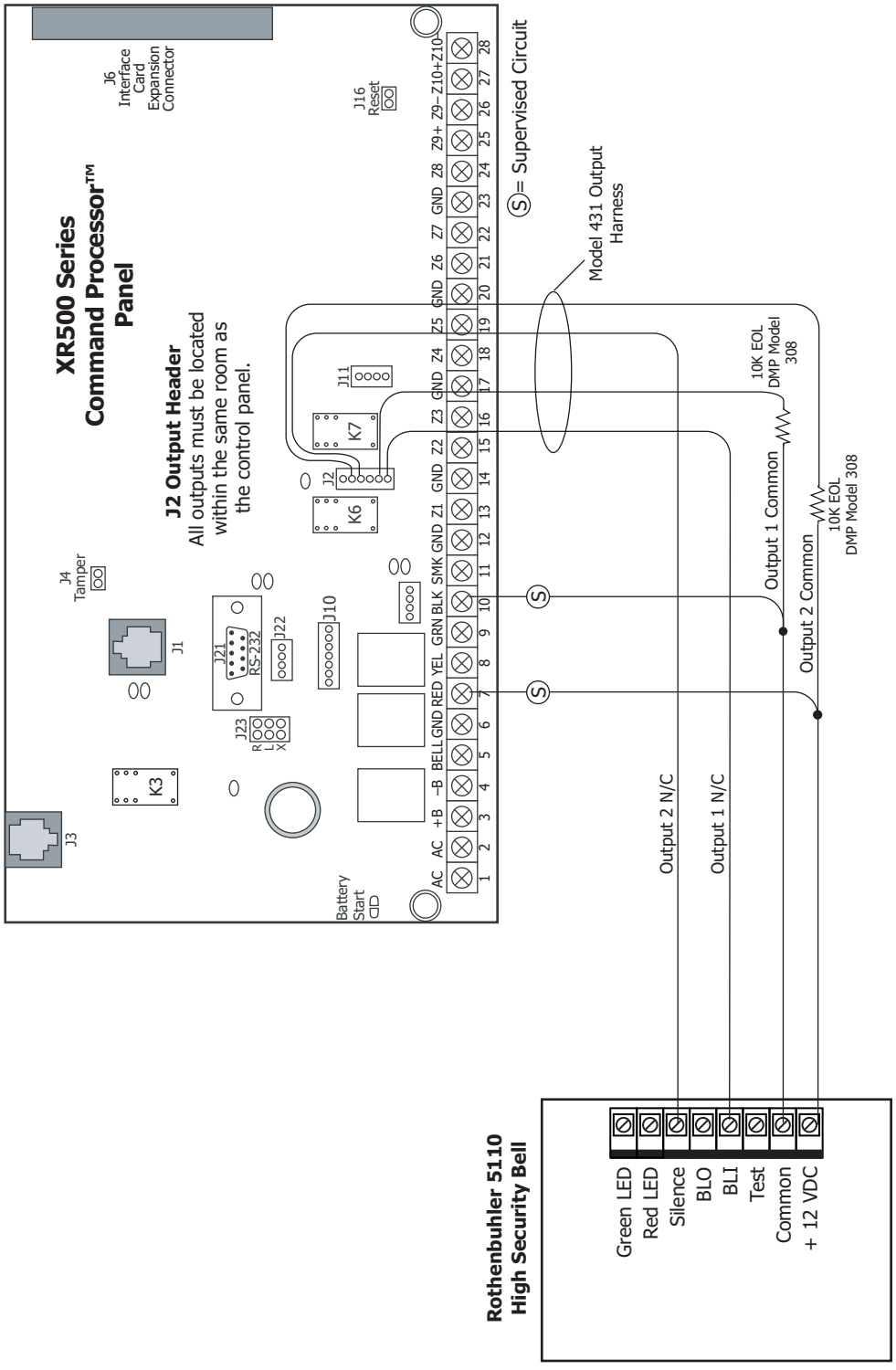


Interfacing D8122 to the XR500 Series Panels

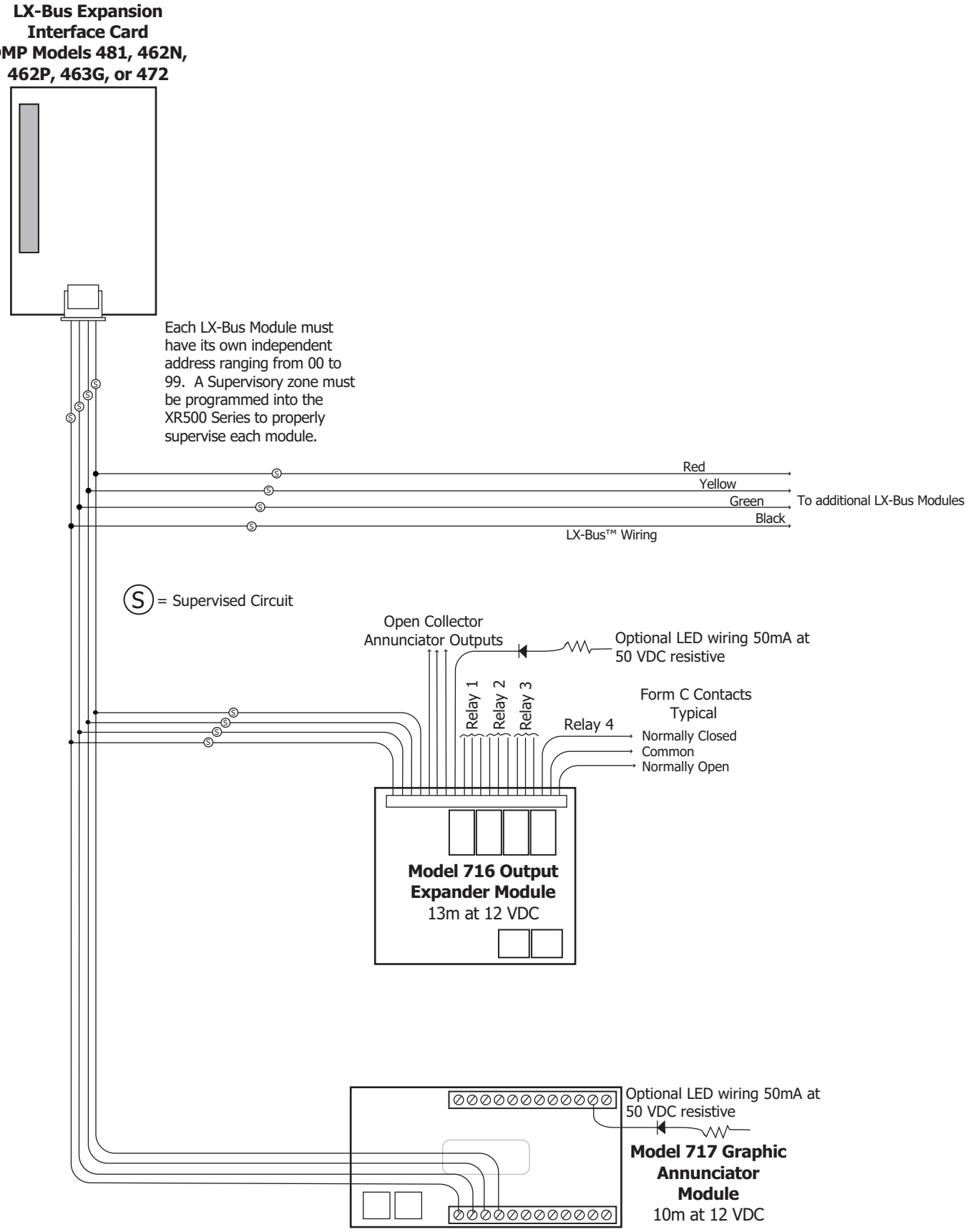
The D8122 may only be used in conjunction with telephone systems that support Derived Channel network. For installation instructions, see the Derived Channel STUD8121A/D8122 Operation and Installation Guide.

- For Standard Line Security applications, the panel must be installed and programmed to meet burglary alarm system requirements.
- The panel must be installed and programmed for reporting all alarm conditions through the integral DACT or network connection to the same central station that monitors the D8122.
- The D8122 must be installed in the same enclosure as the XR500 Series panel using the supplied mounting hardware. Refer to the STUD8121A/D8122 Operation and Installation Guide.
- Derived Channel Communication is not applicable for ULC Canadian Installations.

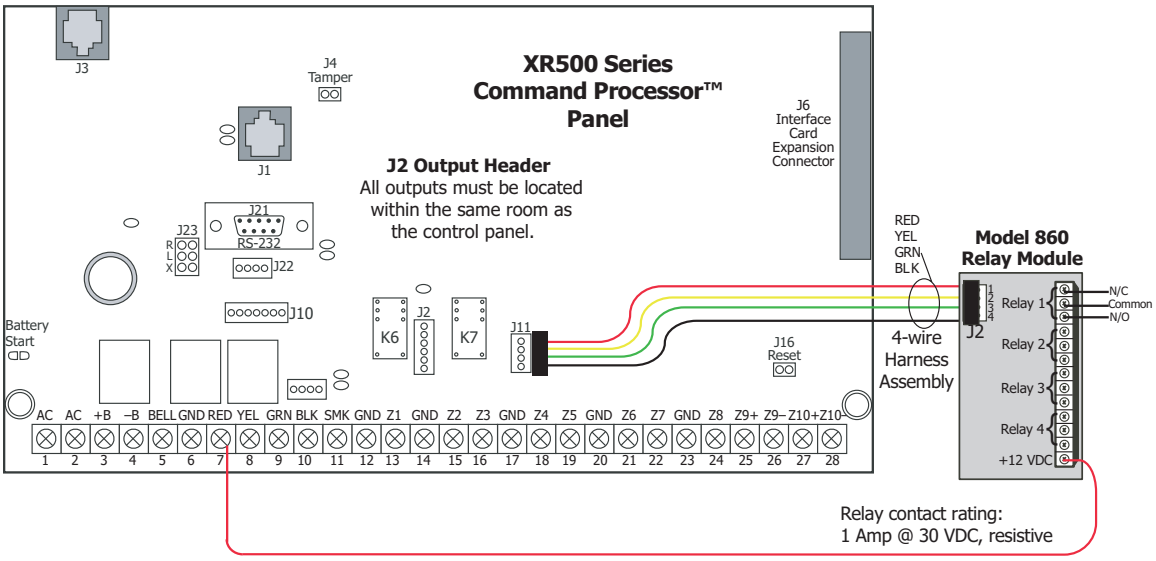
37.16 Rothenbuhler 5110 High Security Bell Wiring



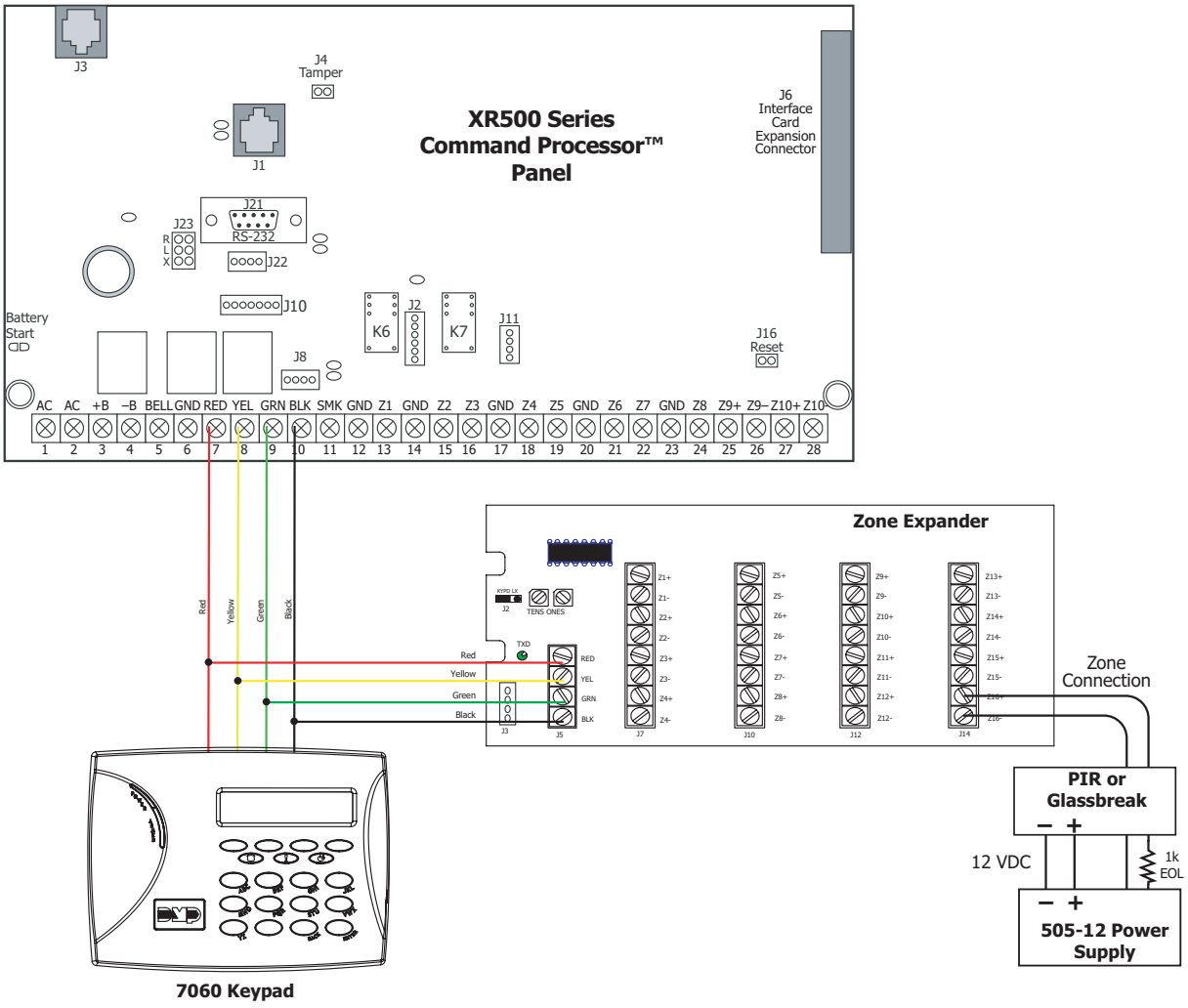
37.17 LX-Bus™ Module Connection


LX-Bus Expansion Interface Card DMP Models 481, 462N, 462P, 463G, or 472
Each LX-Bus Module must have its own independent address ranging from 00 to 99. A Supervisory zone must be programmed into the XR500 Series to properly supervise each module.
Red
Yellow
Green
Black
To additional LX-Bus Modules
LX-Bus™ Wiring
S = Supervised Circuit
Open Collector Annunciator Outputs
Optional LED wiring 50mA at 50 VDC resistive
Relay 1
Relay 2
Relay 3
Relay 4
Form C Contacts Typical
Normally Closed
Common
Normally Open
Model 716 Output Expander Module
13m at 12 VDC
Optional LED wiring 50mA at 50 VDC resistive
Model 717 Graphic Annunciator Module
10m at 12 VDC

37.18 Model 860 Relay Module Connection



37.19 Powered Burglary Devices



Revisions to This Document

This section explains the changes that were made to this document during this revision. This section lists the version, section number with heading, and a quick summary of the change.

Version	Section Number and Heading	Summary of Changes
1.09	31.8 Fire Protective Signaling Systems	Updated to reflect Cell/Net Primary Fire options
1.08	31.8 Fire Protective Signaling Systems	Updated to reflect 463G Commercial Fire
	37.12 Wiring Diagram	Added Panel Slave Communicator using 630F Annunciator
	37.13 Wiring Diagram	Added Panel Slave Communicator using Outputs
1.07	18.1 J3 Telephone RJ Connector	Added Caution statement
1.06	3.4 Accessory Devices	Added 1165, 1165H, 1165HS Wireless Smoke Detectors, 1181 PIV, and 1182 OS&Y
	6.8 Power Requirements	Updated 1100X Current Draw
	31.14 Wireless Testing	Added section for Wireless Commercial Fire requirement
	Listings and Approvals	Added UL 268, and UL 346 listings
1.05	3.4 Accessory Devices	Added CellCom Series
	24.10 463G or CellCom, CELL Only	Added CellCom reference
	24.11 463G or CellCom, NET w/ CELL	Added CellCom reference
	24.12 463G or CellCom, NET w/ CELL	Added CellCom reference
	27.9 463G or CellCom, CELL Only	Added CellCom reference
	27.10 463G or CellCom, NET w/ CELL	Added CellCom reference
	27.11 463G or CellCom, NET w/ CELL	Added CellCom reference

Listings and Approvals

FCC Part 15

FCC Part 68 Registration ID CCKAL00BXR500

NIST Validated XR500E Encrypted Command Processor Panel Certificate #130

California State Fire Marshal (CSFM)

New York City (MEA)

ANSI/SIA CP-01-2000 False Alarm Reduction

Underwriters Laboratories (UL) Listed Commercial and Residential Fire, Burglar, Holdup, and Access Protected Premise Unit

ANSI/UL 294	Access Control System Units
ANSI/UL 365	Police Connected Burglar
ANSI/UL 609	Local Burglar
ANSI/UL 636	Holdup Alarm Units and Systems Accessory
ANSI/UL 1023	Household Burglar
ANSI/UL 1076	Proprietary Burglar
ANSI/UL 1610	Central Station Burglar
ANSI/UL 1635	Digital Burglar
ANSI/UL 268	Smoke-Automatic Fire Detectors
ANSI/UL 346	Waterflow Indicators for Fire Protective Signaling Systems
ANSI/UL 864	Fire Protective Signaling 9th Edition
ANSI/UL 985	Household Fire Warning

UL Bank, Safe, and Vault

UL Standard Line Security

UL Encrypted Standard Line Security

Underwriters Laboratories Canada (ULC) Listed

ULC 5545	Household Fire
ULC Subject-C1023	Household Burglar
ULC/ORD-C1076	Proprietary Burglar
ULC S304	Central Station Burglar

Digital Monitoring Products

800-641-4282

www.dmp.com

Made in the USA

INTRUSION • FIRE • ACCESS • NETWORKS

2500 North Partnership Boulevard

Springfield, Missouri 65803-8877

LT-0681 1.09 © 2010 Digital Monitoring Products, Inc. 10215

MADE IN U.S.A.